Shuffle coming in Getty oil empire?

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BUSINESS WEEK

A McGRAW-HILL PUBLICATION FIFTY CENTS JAN. 11, 1958

Winning his bet? George Romney of AMC gambled on a major shift in the U. S. auto market.

(Marketing)

E B POWER
UNIVERSITY MICROFILMS
313 N 1 ST 2-C
ANN ARBOR MICH

Photo courtesy Princeton Knitting Mills, Inc., New York, N. Y.

How's this "fur" ingenuity?

Man-made mink is now a reality and just one of a number of minor miracles being wrought by today's textile manufacturers.

Their sorcery stems from two recent developments. First is a knitted fabric with a long, luxurious, cut pile of soft, but sturdy, synthetic fibers. And second is its *back-size*, based on a combination of CHEMIGUM LATEX and PLIOVIC LATEX.

The latex backing is important as it provides essential body, pile lock, dimensional stability, flexibility and resistance to raveling. CHEMIGUM LATEX is used because it imparts these properties on a long-term basis, thanks to its excellent resistance to dry cleaning and aging. PLIOVIC LATEX—a vinyl latex—is used, primarily, to control the "hand" of the fabric.

If you are interested in making a pile fabric of outstanding quality, be sure you have the full story on both CHEMIGUM LATEX and PLIOVIC LATEX in back-sizes. It's yours for the asking. Just write to Goodyear, Chemical Division, M-9415, Akron 16, Ohio.

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Chemigum, Pliolite, Pliovic—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

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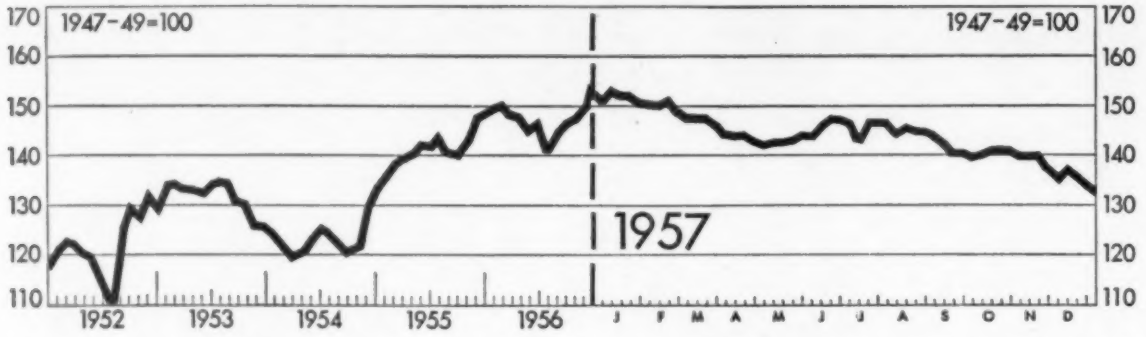
NUMBER 1480

FIGURES OF THE WEEK



	1946 Average	Year Ago	Month Ago	Week Ago	§ Latest Week
BUSINESS WEEK INDEX (chart)	**91.6**	**152.0**	**136.3**	**†135.0**	***133.6**
PRODUCTION					
Steel ingot (thous. of tons)	1,281	2,519	1,770	†1,501	**1,548**
Automobiles and trucks	62,880	108,781	167,761	†96,255	**94,060**
Engineering const. awards (Eng. News-Rec. 4-wk daily av. in thous.)	$17,083	$68,506	$49,501	$44,574	**$44,075**
Electric power (millions of kilowatt-hours)	4,238	11,671	12,315	11,218	**11,692**
Crude oil and condensate (daily av., thous. of bbls.)	4,751	7,417	6,850	6,940	**6,863**
Bituminous coal (daily av., thous. of tons)	1,745	1,724	1,618	1,563	**1,144**
Paperboard (tons)	167,269	102,280	258,322	213,154	**N.A.**
TRADE					
Carloadings: miscellaneous and l.c.l. (daily av., thous. of cars)	82	69	62	56	**54**
Carloadings: all others (daily av., thous. of cars)	53	45	43	42	**41**
Department store sales index (1947-49 = 100, not seasonally adjusted)	90	112	159	†274	**147**
Business failures (Dun & Bradstreet, number)	22	222	287	166	**203**
PRICES					
Spot commodities, daily index (Moody's, Dec. 31, 1931 = 100)	311.9	438.2	391.1	393.7	**391.8**
Industrial raw materials, daily index (BLS, 1947-49 = 100)	††73.2	99.0	84.4	†83.9	**83.8**
Foodstuffs, daily index (BLS, 1947-49 = 100)	††75.4	83.3	85.4	†85.2	**86.3**
Print cloth (spot and nearby, yd.)	17.5¢	18.8¢	17.8¢	17.8¢	**17.8¢**
Finished steel, index (BLS, 1947-49 = 100)	††76.4	171.1	181.7	181.7	**181.7**
Scrap steel composite (Iron Age, ton)	$20.27	$60.83	$32.00	$32.83	**$33.00**
Copper (electrolytic, delivered price, E & MJ, lb.)	14.045¢	35.965¢	26.735¢	26.894¢	**26.925¢**
Wheat (No. 2, hard and dark hard winter, Kansas City, bu.)	$1.97	$2.37	$2.21	$2.18	**$2.20**
Cotton, daily price (middling, 1 in., 14 designated markets, lb.)	**30.56¢	33.32¢	34.91¢	†34.89¢	**34.88¢**
Wool tops (Boston, lb.)	$1.51	$2.23	$1.85	$1.85	**$1.85**
FINANCE					
500 stocks composite, price index (S&P's, 1941-43 = 10)	17.08	46.42	40.96	†39.82	**40.77**
Medium grade corporate bond yield (Baa issues, Moody's)	3.05%	4.48%	5.08%	4.98%	**4.94%**
Prime commercial paper, 4 to 6 months, N. Y. City (prevailing rate)	¾–1%	3⅛%	3⅞%	3¾%	**3¼%**
BANKING (Millions of Dollars)					
Demand deposits adjusted, reporting member banks	††45,820	57,629	55,389	56,169	**56,934**
Total loans and investments, reporting member banks	††71,916	87,634	86,858	88,487	**89,015**
Commercial and agricultural loans, reporting member banks	††9,299	31,137	31,573	32,288	**32,250**
U. S. gov't guaranteed obligations held, reporting member banks	††49,879	26,774	25,619	26,087	**26,422**
Total federal reserve credit outstanding	23,888	27,524	25,387	26,687	**26,623**

MONTHLY FIGURES OF THE WEEK		1946 Average	Year Ago	Month Ago	Latest Month
Private expenditures for new construction (in millions)	**December**	$803	$2,654	$2,942	**$2,705**
Public expenditures for new construction (in millions)	**December**	$197	$890	$1,170	**$962**
Consumer credit outstanding (in millions)	**November**	$6,704	$40,831	$43,274	**$43,530**
Installment credit outstanding (in millions)	**November**	$3,174	$31,240	$33,504	**$33,596**
Manufacturers' inventories (seasonally adjusted, in billions)	**November**	$21.3	$52.2	$54.1	**$53.8**
Wholesalers' inventories (seasonally adjusted, in billions)	**November**	$5.5	$12.8	$12.8	**$12.8**
Retailers' inventories (seasonally adjusted, in billions)	**November**	$9.8	$23.5	$24.2	**$24.3**
Exports (in millions)	**November**	$812	$1,544	$1,674	**$1,681**

* *Preliminary, week ended January 4, 1958.*
† *Revised.*
†† *Estimate.*
** *Ten designated markets, middling ⅞ in.*
N.A.—Not available at press time.
§ *Date for 'Latest Week' on each series on request.*

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New telephone system permits growing businesses to "let out" their telephone facilities without having to get a whole new "suit of clothes"

The Bell System brings out another improvement in modern telephone service . . . a simple and flexible dial telephone system that grows as the business grows.

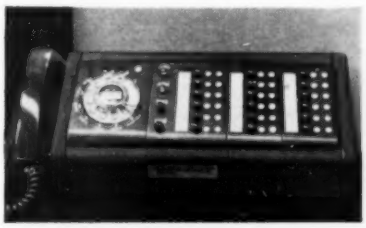
In these days when so much business is done by telephone, many companies find themselves faced with overloaded communications systems.

To meet this situation, the Bell System has developed a "packaged" type of dial telephone system that takes up little space and is quickly and easily installed.

The new equipment, known as the 756A dial telephone system, is so compact that it can be located in general office space. At today's rentals, this compactness represents a real saving. Equipment cabinets are soundproofed.

The dial switching unit is easily installed by the use of plugs, much the same as a washing machine is plugged into an electrical outlet. Businesses that have this new system and grow to more than 40 office telephones can expand in most cases to as many as 60 telephones by a simple change in existing equipment.

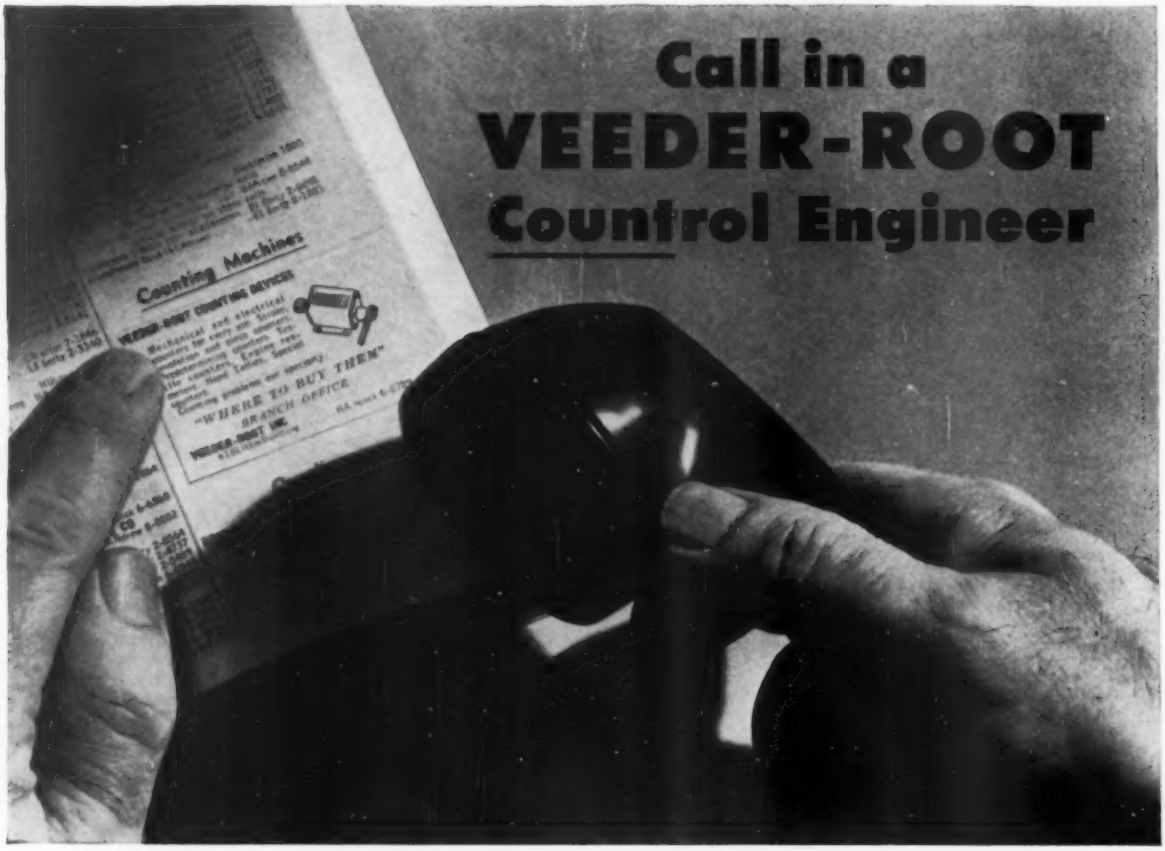
One of our biggest jobs is helping businesses to grow. This is another example of our lively interest in matching telephone service to our customers' always expanding needs.



Modular Pushbutton Key Console provides simplified operation, saves time, speeds service, and occupies little space. All calls disconnect automatically.

Working together to bring people together . . . **BELL TELEPHONE SYSTEM**

When it comes to Counting...PUT "first things first!"



"Design them in, when you begin" . . . that's the way to *integrate* Veeder-Root Counters into a new product or process. And the quick way to do this is call the nearest Veeder-Root office and ask for an engineer.

You can count on this man to save you time and money in engineering, purchasing and assembly. For he can often save you the premium cost of a special counter by adapting or modifying a standard counter to do the job you want done . . . whether it's to give you or your customers direct readings . . . remote indication . . . facts-in-figures for production, wage-payment or stock *Count*rol . . . or proof of performance-guarantee.

So when it comes to counting, call the local office or the Hartford plant, JAckson 7-7201.

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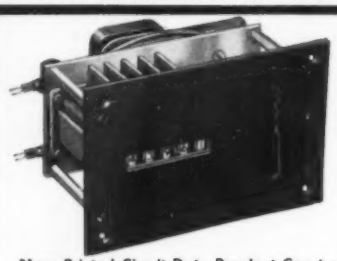

New Printed-Circuit Data Readout Counter

New Panel-Mount Magnetic Counter with Lock-Key Reset

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READERS REPORT

Elementary, Watson

Dear Sir:

It is interesting to note that the "shocking" engineering education of the Russian technician, Red Formula Produces Technical Supermen [BW—Dec.14'57,p132] is neither shocking nor Russian in origin.

Avid readers of Sherlock Holmes will remember Sir Arthur Conan Doyle's ideas of a super-specialist, trained in a narrow field. In a "Study in Scarlet" . . . Holmes discusses his early education in the field of deduction.

"You see, Watson, I consider that a man's brain originally is like a little empty attic, and you have to stock it with such furniture as you choose. A fool takes in the lumber of every sort that he comes across, so that the knowledge which might be useful to him gets crowded out, or at best is jumbled up with a lot of other things, so that he has a difficulty in laying his hands upon it. Now the skillful workman is very careful indeed as to what he takes into his brain attic. He will have nothing but the tools which may help him in doing his work, but of these he has a large assortment, and all in the most perfect order. It is a mistake to think that the little room has elastic walls and can distend to any extent. Depend upon it that there comes a time when for every addition of knowledge you forget something you knew before. It is of the highest importance, therefore, not to have useless facts elbowing out the useful ones." . . .

WILLIAM I. ORR
PRESIDENT
RADIO PUBLICATIONS, INC.
LOS ANGELES, CALIF.

Dear Sir:

I read with considerable interest . . . Red Formula Produces Technical Supermen.

I feel that your report was a little glib and was all what I call "black and white without any of the corresponding greys."

You imply in your account that the only solution for American education in so far as technical superiority is concerned, is to copy the Russian approach, whether or not it really is the way it is reported in your journal.

European countries generally follow a liberal system of education and combine with it a higher degree of technical instruction and

"We've got to
double our capacity!"

". . . and watch operating costs, too!"

"Well, if it's a question of
expansion and economy, it's time
to see how we can . . .

POWER-UP!

HARVEY ALUMINUM did... doubled capacity and achieved more economical per-pound production than ever before. Harvey's large-scale expansion program called for extrusions of unprecedented weight and dimensions and a major investment in large capital equipment. Investigation proved that highly flexible, high-voltage electrical distribution was the primary power requirement. A spot network system, feeding self-contained power centers at major load points, utilizing bus duct for maximum flexibility, now serves equipment throughout the plant. Maintenance has been reduced, service continuity is assured, and voltage regulation has measurably improved. Flexibility to absorb future load growth and changeovers, too, has been provided.

This high order of electrical planning, from service entrance equipment to plant-wide lighting, is assuring Harvey's position as one of the world's most efficient producers of fabricated aluminum.

Power-Up! It's a practical answer to many a production problem. You can use electric power as a potent cost-cutting weapon, as an avenue to increased profits. Your electric utility sales engineer or your Westinghouse representative will tell you how.

J-97215-A

A PROGRAM OF ELECTRICAL SERVICE SPONSORED BY

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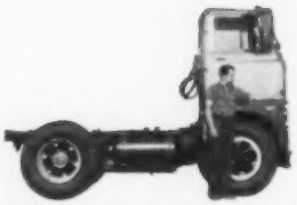
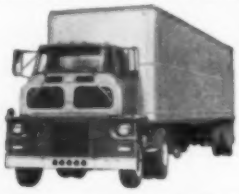
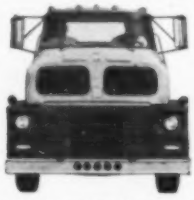


Load! 48 inches from bumper to back of cab. *You haul up to 224 cubic feet more legal payload*—more than any other truck in its weight class—from city to city or coast to coast.

Lift! New pushbutton hydraulic lift tilts cab in less than 15 seconds. There's matchless engine accessibility. Service is easier, faster. You cut maintenance costs and down time.



Go! New V-8 power. Three all-new, all-truck V-8 engines up to 549 cubic inches, with *true truck torque. The payoff:* more *go* with less shifting, tight-fisted economy, longer life.



Look! New visibility. See down 26 inches from bumper through two lower windshields for safer and easier city driving, plus high over-traffic vision. 1,708 sq. in. of forward vision!

INTERNATIONAL HARVESTER COMPANY, CHICAGO

Motor Trucks • Crawler Tractors
Construction Equipment • McCormick® Farm Equipment and Farmall® Tractors

NEW!...

10% more payload capacity!

Shortest tilt cab, only 48 in. bumper-to-back-of-cab!

Unique new visibility!

Haul bigger payloads today and in the future! Definite trends call for a *completely* different type of truck for profitable over-the-road hauling. Here it is—the new INTERNATIONAL® Sightliner!

With the 48-inch bumper-to-back-of-cab dimension you can pull the longest trailers or combinations, and operate with dromedary units. You get increased front axle loading, too. The short 28-inch bumper-to-front-axle dimension gives you maximum gross payloads under bridge formula restrictions... *everything* for the biggest payloads and biggest profits.

The INTERNATIONAL Sightliner tilt-cab tractor. GCW 50,000 to 65,000 pounds

Fleet cost records prove

INTERNATIONAL

TRUCKS cost least to own!

Square D--wherever electricity

1800-Ton-per-Hour Dravo Unloader in operation at Pennsylvania Railroad's Greenwich Point, Philadelphia, Ore Unloader Pier

Square D Field Engineering Service is available through more than one hundred Square D offices, backed by an international network of over 1000 authorized electrical distributors and 17 plants in the United States, Canada, Mexico and England

Executive Offices • 6060 Rivard Street, Detroit 11, Michigan

EC&M HEAVY INDUSTRY ELECTRICAL EQUIPMENT...NOW A PART OF THE SQUARE D LINE

D

SQUARE D COMPANY

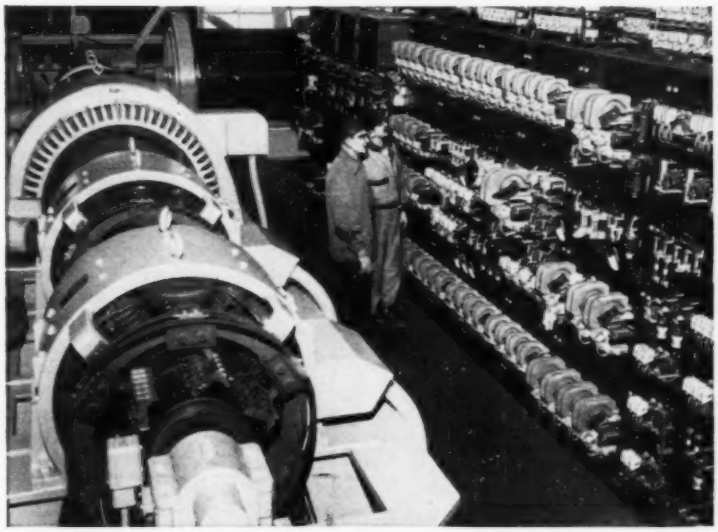
is distributed and controlled...

22½ TON BITES!

Everything about this ore unloader is big...and it does a big job with amazing speed. Powered through 20 motors ranging in sizes up to 800 HP, it takes 22½ tons of ore from a ship's hold on an average cycle handling time of 45 seconds!

Electrical control equipment does a big job, too, in putting this unloader through its paces. And there's a lot of it. Hoist control, trolley control, bridge control brakes. *All of it is EC&M.**

*EC&M electrical products for industry's big, tough jobs are manufactured by The Electric Controller & Mfg. Co., a division of the Square D Company



Here is an example of EC&M's control and engineering service in action. These EC&M control panels are mounted in the machinery room, 100 feet above ground level, along with generators which supply DC power for unloader motors. EC&M is geared to supply the complete job including rotating machinery for adjustable voltage and constant potential drives.

Photos courtesy Dravo Corporation, Elliott Company, and the Pennsylvania Railroad

A *Complete* LINE OF ELECTRICAL DISTRIBUTION AND CONTROL EQUIPMENT

SAFETY SWITCHES
CIRCUIT BREAKERS
SERVICE ENTRANCE EQUIPMENT
METER MOUNTINGS
LIGHTING AND POWER PANELBOARDS
DISTRIBUTION SWITCHBOARDS
STAGE DIMMER BOARDS
SWITCHGEAR & UNIT SUBSTATIONS
BUSWAYS & WIREWAYS
LIGHTING CONTROL—LOW VOLTAGE
VOLTAGE TESTERS
MOTOR STARTERS
RELAYS AND CONTACTORS
TIMERS
TERMINAL BLOCKS
PUSHBUTTONS
LIMIT AND FOOT SWITCHES
PRESSURE, FLOAT, & VACUUM SWITCHES
ADJUSTABLE SPEED DRIVES
CONTROL CENTERS
HIGH VOLTAGE CONTROL
SYNCHRONOUS MOTOR CONTROL
WELDER CONTROL
PRESS CONTROL
LAUNDRY CONTROL
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TEXTILE MACHINE CONTROL
MACHINE TOOL CONTROL
STEEL MILL CONTROL
CRANE & HOIST CONTROL
RESISTORS
MAGNETIC BRAKES
LIFTING MAGNETS

"We've reduced our scrubbing time from 70 to 7 man-hours. . . and our floors have never before been so clean!"

— Says Foreman of BURNY BROS. BAKERY, CHICAGO

Garage and stockroom floors in Burny Bros. large, modern bakery get daily scrubbing with a *Job-Fitted Combination Scrubber-Vac and Setol Cleanser* . . . .

THEY'RE AN UNBEATABLE TEAM to speed the cleaning of oily, greasy floors. *Here's why:* A *Scrubber-Vac* completely mechanizes scrubbing. It applies the cleanser, scrubs, flushes if required, and picks up (damp-dries the floor)—*all in one operation! Job-fitted* to specific needs, a *Scrubber-Vac* provides the maximum brush coverage consistent with the area and arrangement of the floors. Its teammate, *Setol Cleanser,* is specially designed for the greater speed of *combination-machine-scrubbing* . . . emulsifies grimy oil and grease *instantaneously* for fast, thorough removal by the machine's powerful vac. Moreover, *Setol* retains its strength longer than average alkaline cleansers. This, too, speeds the cleaning process . . . saves on materials . . . and cuts operating time of the machine, which in turn reduces labor costs.

The *Scrubber-Vac* shown above is *Finnell's 213P,* for heavy duty scrubbing of large-area floors. It's *self-propelled,* and has a 26-inch brush spread. Cleans up to 8,750 sq. ft. per hour (and more in some cases), depending upon condition of the floors, congestion, et cetera. (The machine can be leased or purchased.) *Finnell* makes a full range of sizes, and *self-powered* as well as *electric* models . . . also a full line of fast-acting cleansers. In fact, *Finnell makes everything for floor care!*

Find out what *you* would save with *combination-machine-scrubbing.* For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 3801 East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.
Originators of Power Scrubbing and Polishing Machines
Everything FINNELL for Floor Care
BRANCHES IN ALL PRINCIPAL CITIES

knowledge than is apparently obtained in the undergraduate courses in the Americas. . . .

W. SEFTON
PROFESSIONAL ENGINEER
W. SEFTON & ASSOCIATES LTD.
TORONTO, CANADA

Religious Census

Dear Sir:

I must disagree sharply with your editorial Pressure Pointing [BW—Dec.21'57,p128], opposing the omission of the religious census in 1960. Religion, or lack thereof, simply is none of the state's business. Census statistics are not really "anonymous"—only a secret ballot is and surely you would not favor replacing that. Religion is at least as personal as political opinion and, unlike the latter, its quantification does not decide on the individuals who govern us, or anything else. Comparisons with income tax, etc., are quite irrelevant.

Any group of citizens may organize for any lawful civic and legislative purpose. Whether it is called a "pressure group" depends, I suppose, on whose ox is gored. Some of the people favoring this scheme hoped for "official" census figures to bolster them in future applications of pressure. . . .

JOHN E. ULLMANN
CONSULTING ENGINEER
NEW YORK, N. Y.

Dear Sir:

After reading your editorial, Pressure Pointing, I completely fail to understand your attitude.

Statistics regarding income, age, etc. are of value in many ways, industrial planning, among others, but statistics regarding church preference would have little, if any, worth. I contend that the inclusion of a question regarding church preference on the 1960 census is an outgrowth of the superficial piety now sweeping the country. . . .

The Supreme Court has repeatedly upheld the notion that church and state are to be absolutely separate, and that religious freedom includes the right not to believe. . . .

You say "We simply can't believe that any good church member would have to search his soul before indicating his preference to a census taker." Well, here is a good church member who would rather go to jail for not answering such a question.

RITCHIE D. MIKESELL
UNIVERSITY OF ILLINOIS
CHAMPAIGN, ILL.

Farewell to another Bright Young Man! The boss had great hopes for him. Plans, too. And now he's joining a competitor. Why?

More money? Partly. Yet his year-end raise was as high as the boss could make it (company earnings are down this year, don't forget.) The real reason lay deeper. Being no fool, this young career man realized that company planning was based too much on guesswork – leading to costly mistakes, missed opportunities, lost profits. Knowing this, he feared for his company's future over the long pull – and for *his* future, too.

Here's where Keysort punched-card controls could have made a great difference. Keysort gives management accurate, *on time* reports on every operation . . . helps you spot money-losing situations *fast*. With Keysort's multitude of meaningful facts, management can plan more realistically, can build the confidence and even the profits necessary to attract and hold the kind of top-notch men that every company is after.

Keysort punched cards – speeded by the new Keysort Data Punch which simultaneously imprints and code-punches production or sales information–offer the simplest, most flexible means of obtaining the fast, accurate, comprehensive reports you need for complete control of your business and profits. Without disrupting present accounting methods. At remarkably low cost.

The nearby McBee man has a presentation which will show you how it's done. Phone him, or write us.

McBEE KEYSORT®

PUNCHED-CARD CONTROLS FOR ANY BUSINESS

ROYAL McBEE Corporation PORT CHESTER, N. Y., Offices in principal cities. In Canada: The McBee Company, Ltd., Toronto 16

WHITING WORKS FOR

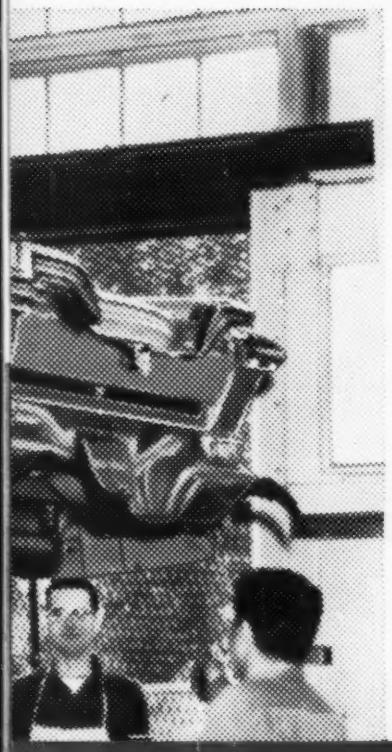
The 1958 Edsel in final production line stages.

A FEW
OF THE MANY
WHITING PRODUCTS
WORKING FOR FORD

WHITI

MANUFACTURERS OF CRANES • TRAMBEAM HANDLING SYSTEMS • TRACKMOBILES • FOUNDRY,

FORD MOTOR COMPANY



AND FOR 87 OF THE TOP 100 CORPORATIONS

Peppy on the highway, the new Edsel is full of GO during production too—and Whiting Foundry equipment helps make it so. At Ford's Cleveland Foundry, Whiting Cupolas, Skip Chargers, Transfer Ladles and supplementary equipment get star billing in casting Edsel engine blocks. At Ford plants elsewhere, other Whiting products combine to keep Edsel and Ford parts on the move . . . getting them to assembly areas fast, with less effort, no wasted man-hours and minimum bottlenecks. Indeed, Whiting's roster of rugged, specialized equipment contributes greatly to the profit and proficiency demands of virtually every industry . . .

THIS IS WHY 87 OF AMERICA'S "FIRST HUNDRED" CORPORATIONS ARE WHITING CUSTOMERS

A new 32-page idea booklet shows how your company can benefit from Whiting equipment. "Working for Profit" is filled with on-the-job photographs . . . each classified by type of industry for your convenience. Write today for a complimentary copy of "Working for Profit."

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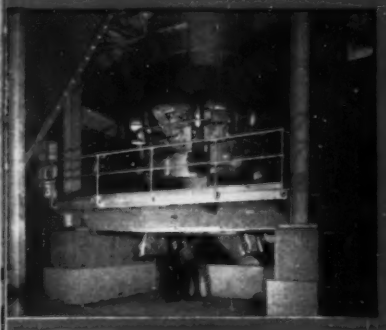
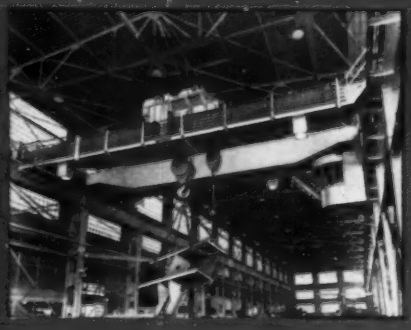
78 King Street, Welland, Ontario

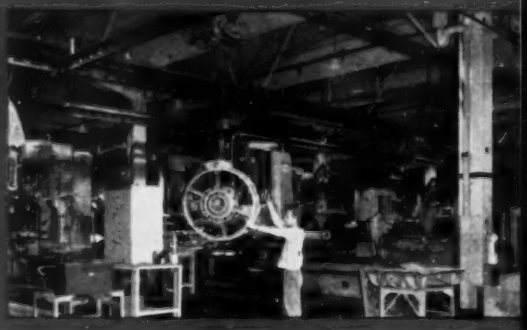
Whiting International
30 Church Street, New York 7, New York



One of ten Whiting No. 12 cupolas that do all the melting at Ford's Cleveland Foundry, this legless workhorse and its partners can produce up to 2100 tons of molten metal a day.



Reliable overhead cranes like this carry heavy loads, give top handling efficiency at lower costs. Ford chose Whiting Cranes for Edgewater, New Jersey; Dearborn, Rouge (Dearborn) and Highland Park, Michigan, plants.



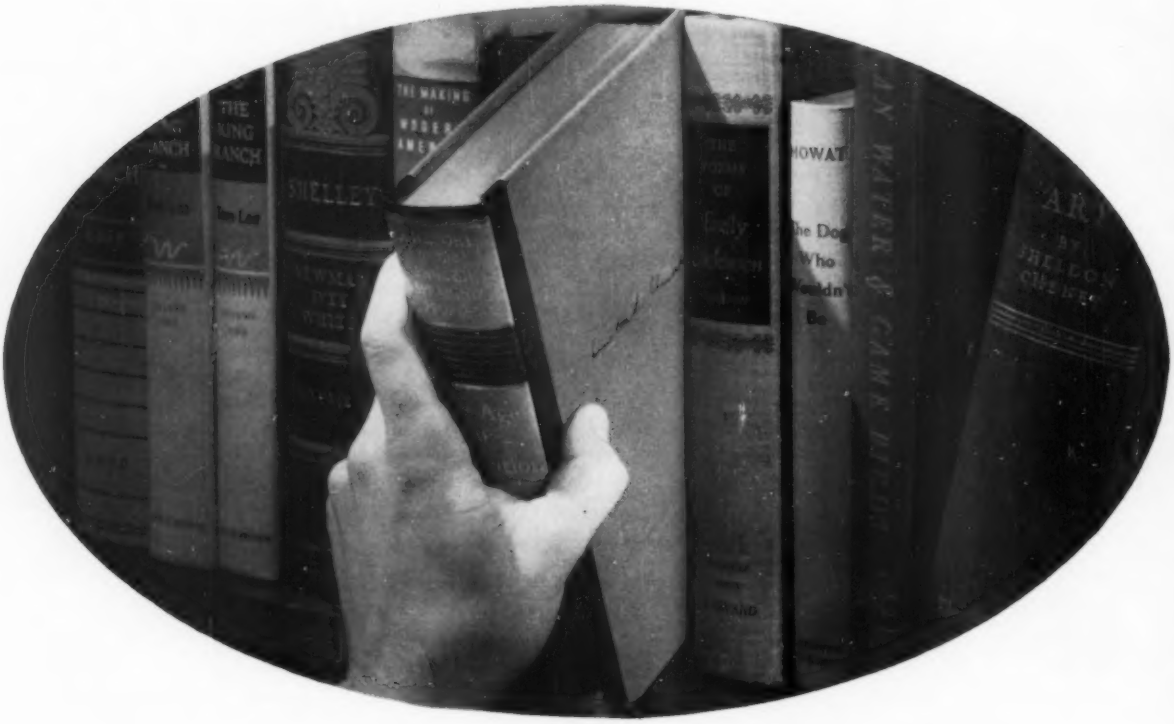
World's largest factory under one roof, Ford Aircraft Engine plant, Chicago, gets full area coverage through extensive Whiting Trambeam Overhead-handling system. Above, a magnesium casting is a "hop" closer to being part of a new jet engine!

NG

AILROAD AND CHEMICAL PROCESSING EQUIPMENT

A LEADING MANUFACTURER OF INDUSTRIAL EQUIPMENT FOR OVER 70 YEARS

YOU'RE JUDGED BY your bookshelf



YOU'RE JUDGED BY your printing

When visitors glance at the books you own, they can quickly find out about your interests and hobbies, judge your taste and your character.

Your prospects, too, quickly judge the character of your company by your printing. Sparkling booklets and well-printed brochures mark your company as one that pays careful attention to details — a trustworthy company, good to do business with.

One important factor in fine printing is the printing paper you choose. Proper printing papers help make colors more colorful, whites whiter, contrasts more dramatic. Booklets with these advantages stay on the job longer, making friends for you and producing more profits.

Have a GOOD printer do the job. A good printer knows how to get the fine results you want. Call him in at the *start* of your next job. His cooperation can save you money, increase the selling impact of your printing. Chances are he'll select Warren's High Standard Printing Paper for your job. He knows that Warren's papers are superior and can be trusted to heighten the quality of your printing. *S. D. Warren Company, 89 Broad Street, Boston 1, Massachusetts.*

Warren's HIGH STANDARD **printing papers make a good impression**

When SILENCE *Screams!*

You're at your desk when suddenly you *hear* it . . . *dead silence in the plant!* It *screams* a warning that something is wrong. Power has died, wheels have stopped turning, production is down!

It may be a boiler, a turbine, a transformer that has failed. Perhaps its failure could have been prevented. It's being done every day by Hartford Steam Boiler, where accident *prevention* has been a vital part of Engineering Insurance since 1866.

Engineering Insurance works to help you *keep power alive*. BEFORE the policy is issued, *Engineering* develops information regarding the physical condition of the objects to be insured — enables your agent to "see" the risk and suggest coverage tailored to your needs.

DURING the life of the policy, *Engineering* inspections search for signs of faulty conditions in insured objects and suggest ways to prevent accidents. This service often prolongs the useful life of power equipment.

AFTER an accident (if one occurs) *Engineering* seeks its cause, helps plan safe and adequate repairs, and aids in prompt, fair settlement of claims.

Hartford Steam Boiler's nationwide organization is devoted *exclusively* to Engineering Insurance. Working out of 19 Regional Offices are a hundred Special Agents skilled in engineering insurance underwriting, and more than 600 Company Field Inspectors who inspect insured objects. Their work is aided and co-ordinated by the Company's Home Office engineering staff.

In Boiler and Machinery Insurance, top value comes from having the best in *engineering* service, aimed at helping to keep power *alive*.

Your H.S.B. Engineering Insurance can be tailored to meet your needs.

Your own Agent or Broker can obtain those extra values for you. Call him up! . . . remember, SILENCE is not always golden!

H.S.B. Field Inspection services guard against accident to keep power alive.

THE HARTFORD STEAM BOILER

INSPECTION

AND INSURANCE COMPANY

Hartford 2, Connecticut

Remember, INSPECTION is our *middle* name

to keep power alive

A

WHAT'S AHEAD...

in steel service and supply

New Steels—1958 will peak 1957 by the addition of scores of new sizes and types of steel. Stocked for ready shipment from strategically located Ryerson plants are such new products as:

- **Pre-painted Steel** . . . cold-rolled coils, in color choices, widths from ¾″ to 42″, gauges .006″ to .035″.
- **New Tubing** . . . hot finished carbon steel in wall thicknesses up to 1½″, O.D. sizes up to 12¾″.
- **Alloy Rebars** . . . reinforcing steel with high-yield point for space saving.
- **Alloy Plates** . . . hot rolled 8620 in 16 sizes, and hot rolled annealed 4140 in 19 sizes, thicknesses up to 5″, widths up to 84″.

These represent only a sample of the many additions in stock . . . and coming during 1958.

New Quality Safeguards—Already known for controls that protect you on every purchase, Ryerson is further revising and tightening its quality control program across the entire range of products. For example, new closer cutting tolerances are being established; specifications are being reviewed, and all phases of Ryerson service are being more exactly tailored to your needs.

Stepped-Up Service—To meet growing demand, new Ryerson plants have just been opened at Indianapolis and Charlotte . . . modernization and expansion programs are completed or under way at Los Angeles, Pittsburgh, St. Louis, Buffalo and Spokane.

1958 promises steel users further improvements in Ryerson plants and facilities. Delivery records, such as shipping five out of every six orders within 24 hours, and 60-minute emergency order handling will continue to assure you of getting exactly what you need *when* you need it.

As close as your telephone, you'll find a wider range of steel stocks . . . controlled high quality . . . dependable service that goes beyond the material itself. So, as you look ahead into 1958, it will pay you to include Ryerson in your plans.

RYERSON CERTIFIED QUALITY

RYERSON STEEL

Member of the INLAND Steel Family

Principal Products: Carbon, alloy and stainless steel—bars, structurals, plates, sheets, tubing—aluminum, industrial plastics, metalworking machinery, etc.

JOSEPH T. RYERSON & SON, INC. PLANTS AT: NEW YORK • BOSTON • WALLINGFORD, CONN. • PHILADELPHIA • CHARLOTTE • CINCINNATI • CLEVELAND
DETROIT • PITTSBURGH • BUFFALO • INDIANAPOLIS • CHICAGO • MILWAUKEE • ST LOUIS • LOS ANGELES • SAN FRANCISCO • SPOKANE • SEATTLE

BUSINESS OUTLOOK

Congress reconvened this week in a spending mood and was greeted by Administration requests for more money for the missile program.

This alone may not arrest the business slide. Yet it will take the rough edge off discouraging industrial statistics. For example, it will **offset in some measure the dip in plant and equipment** outlays.

That much stands out, even though the budget estimates themselves may be confusing to the average businessman.

Military procurement, like private construction awards and equipment orders, is a direct spur to prime contractors **when the orders are placed**—even before any actual dollars are paid out.

These contract placements, begun in November and December, also will gradually fan out in the form of subcontracts to suppliers.

All this will be of some help to **employment.** And **inventory buying** for arms work will cancel out some liquidation of civilian stocks.

—•—

Manufacturers of durable goods apparently didn't begin to cut their inventories until November, but they started in earnest then.

At the end of October, the stocks of all such factories stood at a new high of $31.8-billion (seasonally adjusted). A month later there had been a reduction of about $400-million.

When December figures are available, they doubtless will show a continuation of this trend. That helps us to understand **why business softened so conspicuously in the last two months of 1957.**

Inventory control tightened, of course, a good deal earlier than November. Many plants have been liquidating for quite a while, and others had shut off orders for materials and parts.

But it takes some time for this to show up in work in process and finished goods. That's why, lumping all plants together, we didn't see the dollar totals declining till toward the end of the year.

Inventory liquidation had obviously been foreshadowed by the Dept. of Commerce's monthly reports on manufacturers' sales and new orders.

The value of **orders booked began to decline** as 1957 started.

By contrast, the value of **goods shipped held up** well through midyear. And it exceeded bookings by a wide margin all year.

But, as plants **ate into order backlogs,** they began to cut output after July. That, in turn, led to outright **liquidation of inventories.**

Plants manufacturing durable goods, aided by the turnaround in arms buying, saw the **level of new orders stabilize** in November.

But this came only after unfilled orders had fallen by $11-billion (from $61-billion at the end of 1956 to below $50-billion).

The value of all **manufacturers' shipments in 1957 doubtless set a new record** at about $340-billion against $332-billion in 1956. This, however, may be entirely credited to the gain of better than 5% for **the first nine months;** the fourth quarter fell substantially behind.

Prospects for heavy construction are not particularly encouraging in spite of the activity in public works.

Contract awards compiled by McGraw-Hill's Engineering News-Record show a total value of almost exactly $18-billion for 1957. **That was down 17%** from the $21.7-billion of contracts placed in the previous year.

Public works, to be sure, went soaring, with contracts amounting to $9.6-billion for a 17% gain. However, private awards fell by 38% and totaled not quite $8.4-billion for the year.

When construction is heavily in **highways, schools, and the like,** you need different materials than those for factories and office buildings.

This helps explain declining orders for structural steel.

The American Institute of Steel Construction reports structural steel bookings of reporting mills at 726,000 tons for the final four months of 1957 against 1,144,000 in the same period of 1956.

Shipments for the four months not only topped a year ago but outstripped the new-order tonnage by half a million tons.

—•—

Operations in the steel industry this week are scheduled at about 60% of capacity. That's up from the holiday lows, but it isn't much to cheer about. Moreover, you'll have to hunt these days to find a steel man who will predict that the first-quarter average will be much over 60%.

Defense spending doubtless will take more, but missiles aren't a big tonnage item even though they take the highest grades.

And **demand from the big customer, autos, still is far from vigorous.**

—•—

Prospects of a **big strike in autos** over this spring's wage demands doubtless **would spur car output and send steel demand soaring.**

The effort, of course, would be to run dealers' stocks up sharply.

For the time, however, it doesn't look that way. Ward's Automotive Reports said this week that Detroit's first-quarter schedule now has been cut below 1.5-million cars, nearly 17% under year-ago output and more than 200,000 less than the target a short while ago.

—•—

Coal producers hope for 1958 production not far below 1957's 488-million tons (though the final 1957 outturn itself was a disappointment, considering prospects at this time last year).

Appalachian Coals, Inc., says 1958 output should be 475-million tons.

That, by the way, allows for **a drop of 8-million tons in exports** from 1957's high level of 58-million. But a gain of nearly 4% is forecast for use by the electric utilities, coal's biggest customer.

—•—

Now it's official: **The price of crude oil has come down.**

Previous nibbling away at prices certainly weakened the tone of the market, but the industry wouldn't regard that as the real thing. This week **Humble Oil & Refining,** Jersey Standard's big subsidiary, **posted a 10¢ reduction** in the Corpus Christi area, and that did it.

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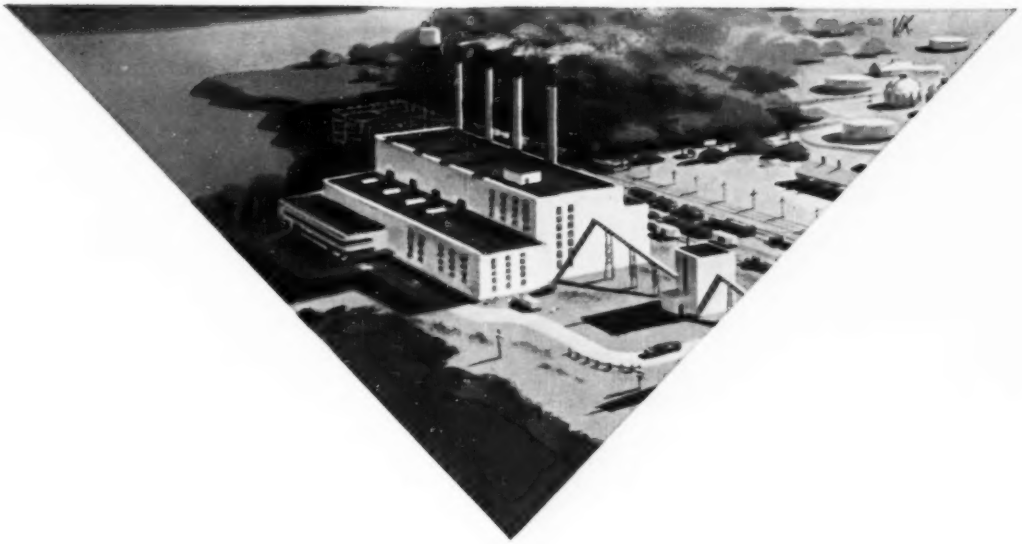

MILES OF TUBING FOR ELECTRIC POWER...

CONDENSER TUBES made by PHELPS DODGE

Modern condensers in steam electric generating plants contain as much as 60 miles of copper or copper-alloy tubes. These tubes change exhaust steam to water, a vital step in the electric power-making cycle. Leading electric light and power companies know they can rely on Phelps Dodge condenser tubes for highest grade materials and skillful workmanship.

PHELPS DODGE COPPER PRODUCTS

CORPORATION · 300 PARK AVENUE, NEW YORK 22, N. Y.

FIRST FOR LASTING QUALITY—FROM MINE TO MARKET

PHELPS DODGE COPPER PRODUCTS CORPORATION P D

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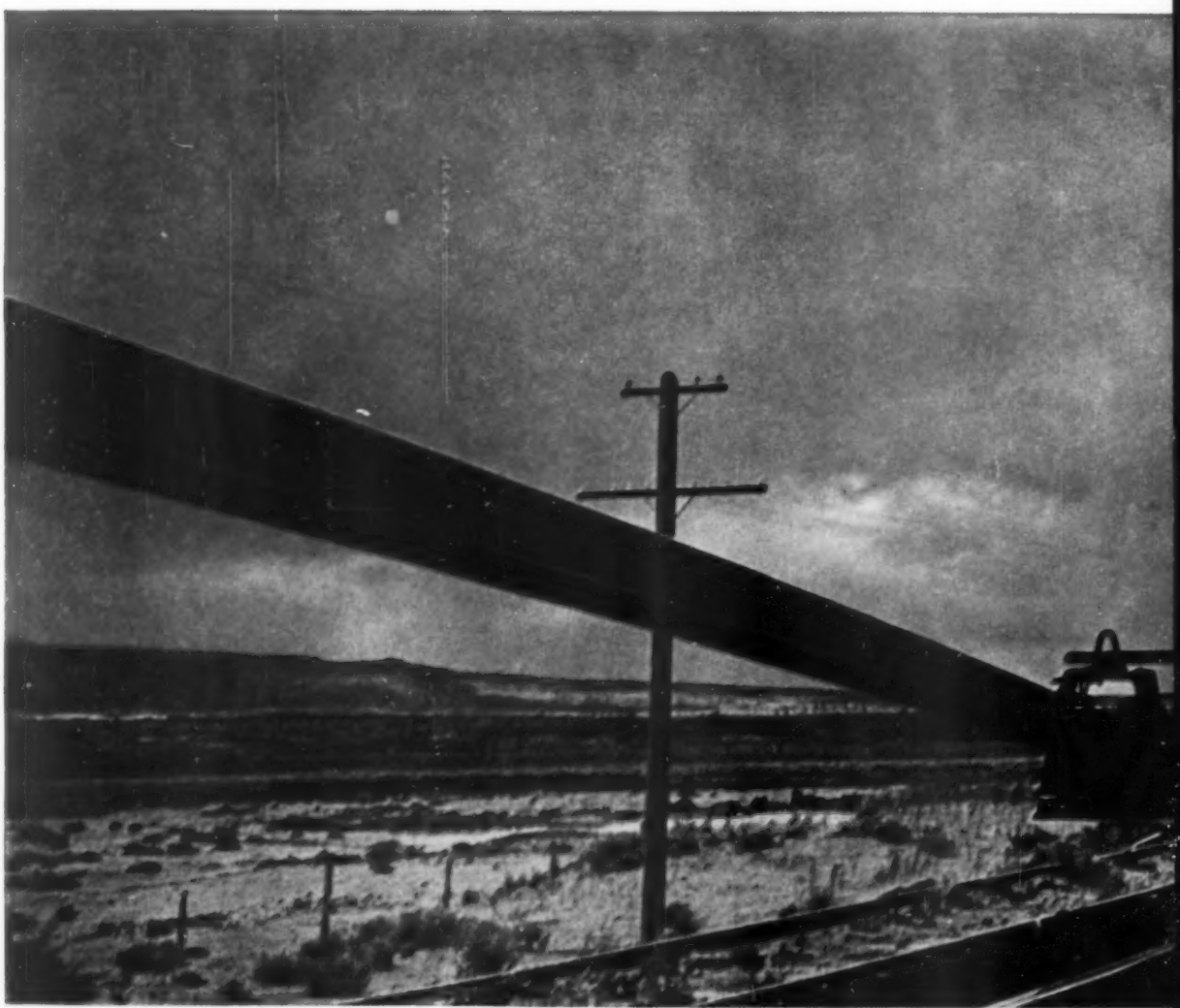
More Railroad Progress like this depends on adequate earnings



Isn't this common sense?

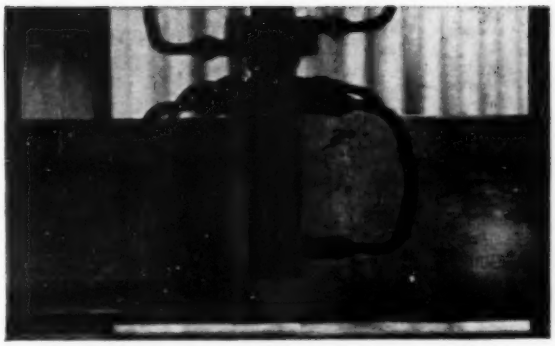
Welded rail is just one example of the many ways railroads are constantly increasing their efficiency.

The railroads will continue to make such improvements – as rapidly as they are able to earn the money to pay for them. For the railroads must pay for improvements out of their own earnings. But the earning power of railroads today is restricted by outdated public policies that favor competing forms of transportation.

This unequal treatment causes the public to lose some of the benefits of railroad progress – progress as important to the nation as it is to the railroads.

In the interests of all of us, the railroads should be permitted equal opportunity to earn an adequate return on the money invested in them. Then everyone would benefit – including you.

Isn't this common sense?



By welding sections of rail together in continuous lengths of steel, railroads often reduce track maintenance costs and give their customers a smoother ride. Above – the welding process. Below – workers lay the welded rail on ties.

AMERICA MOVES AHEAD WITH THE RAILROADS

ASSOCIATION OF AMERICAN RAILROADS, WASHINGTON, D. C.

YOUR BASIC TRANSPORTATION

Pittsburgh COLOR DYNAMICS® Improves Productive Efficiency in New Blaw-Knox Factory

New painting system relieves eye strain, reduces fatigue and provides greater safety for workers in modern road-paving equipment plant at Mattoon, Illinois.

BLAW-KNOX

THE NEW Blaw-Knox plant at Mattoon, Illinois, is another convincing example of the improvement in productive efficiency, safety and morale resulting from the use of Pittsburgh COLOR DYNAMICS.

● **This plant is devoted** to the manufacture of road-paving equipment—concrete pavers, spreaders, mixers, finishers, bituminous paving machines and road wideners. The 300,000-sq. ft. structure was designed by Sverdrup & Parcell, Inc., St. Louis, Mo., architects, and erected by the George A. Fuller Company of Chicago.

● **The interior** of this entire plant was painted according to the principles of COLOR DYNAMICS. The beneficial effects of this painting system are summarized in this comment by A. J. Cox, general manager of the Blaw-Knox Construction Equipment division:

● **"We selected colors** for interior walls and ceiling to create more cheerful surroundings for our workers. Stationary as well as moving parts of machines were painted in colors that help operators see their jobs better. Eye strain is relieved. Nervous tension and physical fatigue are reduced. Safety colors mark hazard areas and safeguard workers against dangers of time-loss accidents.

● **"Our experience** since opening the plant confirms our judgment that properly planned colors are a boon to management and workers alike. They are an aid to greater productivity. The pleasant environment enhances morale. Our entire work force takes pride in our plant's appearance. Work areas are kept clean, simplifying housekeeping. The cheerful and pleasing appearance helps us to recruit new employees in an area where skilled labor has been hard to get. And we enjoy all these benefits at no greater cost than conventional painting."

● **This new Blaw-Knox plant** is only one of thousands of factories in which productive efficiency has been improved by the use of COLOR DYNAMICS. Try it in your plant—in a department or on a machine or two—and see the difference it makes.

Let us Make a Color Plan of Your Plant—It's FREE!

● We'll be glad to mail you a free copy of our fully-illustrated book on COLOR DYNAMICS for industry. It explains what this painting system is and how to use it. It contains scores of practical suggestions. Better still, we'll be glad to prepare a comprehensive color plan of your factory, without cost or obligation. Call your nearest Pittsburgh Plate Glass Company branch and arrange to have our representative see you. Or mail coupon at right.

Send for a Copy of this FREE Book

Pittsburgh Plate Glass Co., Paint Div., Department BW-18, Pittsburgh 22, Pa.

☐ Please send me a FREE copy of your booklet "COLOR DYNAMICS."

☐ Please have your representative call for a COLOR DYNAMICS survey without obligation on our part.

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PITTSBURGH PLATE GLASS COMPANY

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BUSINESS WEEK

JANUARY 11, 1958

NUMBER 1480

Lt. Gen. James M. Gavin, hard-slugging Army chief of research and development, renewed his assault on the Joint Chiefs of Staff—and announced plans to quit the service because of repercussions from his charges of ineffectiveness.

Nelson Rockefeller and 20 others on a committee of the nation's best brains portrayed the U. S. as lagging in the race of military technology—and urged a single chief of staff, substantial spending hikes, and other sweeping reforms in defense.

Adm. Arleigh A. Burke, chief of naval operations, defended the status quo in the Joint Chiefs of Staff—and warned of "authoritarianism in defense" as "an illogical reaction" to the Soviets' spectacular Sputniks. He opposed military reorganization.

Rear Adm. Hyman G. Rickover, Navy boss of atomic shipbuilding, decried delays in U. S. programs—and charged that the Navy two years ago rejected his plan, now being implemented, to design missile-firing atomic submarines.

The Battle of Defense Builds Up

The second session of the 85th Congress opened this week on a note of crisis and urgency rarely felt in peacetime Washington. In the four months since Congress went home, the old international relationships have been shattered by a chain of events that are still shaking the foundations of U. S. military preparedness:

• Russia launched the first two earth satellites and forcibly demonstrated a technological lead over this country in ballistic missile development.

• The influential Gaither committee submitted a momentous report calling for a massive new arms buildup to counter Russia's growing military superiority (BW—Jan.4'58,p30).

• The Eisenhower Administration pulled a delayed but drastic policy switch, lifted its military budget ceilings, and set a new course for steep boosts in defense spending.

• The Senate preparedness subcommittee started a full-dress investigation of the missile program, generating a series of important proposals to overhaul the Pentagon.

These events have brought to a violent boil long-simmering policy squab-

bles over competing service roles and missions, the confusing lines of military authority, and the size and make-up of the defense budget.

• **Common Goal**—This week, there's no doubt that both Congress and the Administration are for a bigger and harder-driving defense buildup. And Congress is taking a stronger role in defense policymaking. But its members are displaying a notable divergence over precise measures. This week:

• The Senate missile investigation, under Democratic leader Lyndon B. Johnson's direction, resumed hearings after a three-week break. Behind closed doors, Rear Adm. Hyman G. Rickover, the Navy's atomic shipbuilding boss, warned that "it is almost too late to match [Russia's latest military] achievement," charged that the Navy turned down his plan to design missile-firing atomic submarines two years ago.

• Gen. Thomas D. White, Air Force Chief of Staff, also testified in closed session. Johnson relayed this version of what he said: (1) the speedup in the Atlas ICBM program has not been enough; (2) there has been no speedup on Titan, another ICBM project; and (3) neither the 1959 defense budget nor this week's request for interim funds provide as much money as should be used for ICBMs.

• Lt. Gen. James M. Gavin, the Army's tough and fiery chief of research and development, suddenly disclosed plans to quit the military service in March. He told the Johnson subcommittee the Pentagon had blocked his promotion since he startled Washington last month by calling the Joint Chiefs of Staff ineffectual and proposing a general military staff organization.

• A plea for greatly increased defense expenditures and stronger unification of the armed services was made in a private report published by the Rockefeller Brothers Fund. Prepared by a panel of 21 defense and industry experts, the report echoes the Gaither committee's grim conclusions about expanding Russian military might and its detailed proposals for revamping U.S. defense plans.

• Defense Secy. Neil H. McElroy officially confirmed that defense spending will rise to about $40-billion in fiscal 1959, starting next July 1—at least $1-billion over the current rate. Details will appear in the new budget that goes to Congress next week.

I. Probes and Debates

In his second appearance before the Johnson subcommittee, Gavin, a World War II paratroop hero and one of the Pentagon's stormier figures, renewed his backing of an overhaul for the Joint Chiefs of Staff organization. The Senate hearings have resounded with complaints that JCS is too unwieldy because its members double as commanders of their individual services and as over-all strategic planners for the President and the Secretary of Defense.

From Gavin, Lt. Gen. James H. Doolittle, Dr. Vannevar Bush, and others—the Rockefeller report is the latest—have come proposals to revamp the Pentagon's top military command. The gist of them all is: that a general staff of top-level military planners, independent of the individual services, must replace the joint chiefs.

As of now, three of the joint chiefs have dual responsibilities—they are members of the top strategic planning staff of the United States, but they are also commanders of their individual services. The fourth JCS member, the chairman, has no direct authority over the other members, serves mostly as presiding officer over a debating society.

• **One Chief**—The proposal to set up a unified general staff would make this fundamental change: a single chief of staff in place of the present committee. The service chiefs would be responsible only for carrying out orders handed down to them.

According to authoritative sources, the Administration is seriously considering a plan to make some move in this direction. But it's unclear how the existing JCS would fit in under the Administration's plan, and some Pentagon men fear the result would only be still another link in the Defense Dept.'s ever-lengthening chain of command.

• **Foes in Congress**—While most of the Johnson subcommittee members are sympathetic to some such proposal, some formidable Congressional voices have come out in opposition, including Sen. Richard Russell (D-Ga.), chairman of the Senate Armed Services Committee, parent of the Johnson group, and Rep. Carl Vinson (D-Ga.), chairman of the House Armed Services Committee, which got into the act this week with its own review of missiles and all other major aspects of defense.

The Navy's uniformed chief, Adm. Arleigh A. Burke, sounded off this week about his "concern [over] centralization and authoritarianism in defense." Burke termed these pressures for military reorganization "an illogical reaction" to the Sputniks.

• **More for Defense**—On Wednesday, the House defense appropriations subcommittee, under Rep. George Mahon (D-Tex.), began hearings on the Defense Dept.'s $1-billion supplemental appropriation request for the current fiscal year. It hoped to push it through without a hitch before taking on the full military budget for next year.

Of the added funds, $683-million is for the ballistic missile speedup—including the start of work on three atomic subs designed to carry the Navy's Polaris IRBM, the type of vessel Rickover claims he wanted to begin building two years ago. The remainder will go for bolstering the air defense system, dispersing Strategic Air Command bases, and for getting the new Advanced Research Project Agency under way. ARPA is a new Pentagon office, separate from the armed services, which will control development of space weapons.

II. Reports From Rockefeller

The hottest bundle of information on our defense status—the highly touted Gaither report—is still an official secret. But much has leaked out about the report's pessimistic estimate of the nation's military posture.

Last week's private Rockefeller-financed study, almost 18 months in the making, comes up with similar conclusions and provides still more ammunition for the growing number of critics of Administration defense policy.

"All is not well with present U.S. security policies and operations," says the Rockefeller report. "The over-all U.S. strategic concept lags behind developments in technology and in the world political situation. Defense organization is unrelated in major ways to critically important military missions. Systems of budgets, appropriations, and financial management are out of gear with the radically accelerating flow of military development. The U.S. system of alliances must be adapted to constantly changing strategic requirements. The U.S. is rapidly losing its lead in the race of military technology."

• **Parallel Proposals**—Against this bleak picture of national security, the Rockefeller committee proposes major operational and policy changes—many of them paralleling the Gaither committee's reported recommendations.

The first Rockefeller proposal goes all out for a single chief of staff, with a staff of high-level officers with no direct ties to any of the services.

The Defense Secretary's office, instead of the individual services, would have direct control over all research, development, and procurement. All officers above brigadier general or equivalent rank would receive their permanent promotions from the Defense Dept. as officers of the "Armed Forces of the U.S."

Other important proposals of the Rockefeller report:

• Defense spending should be "increased substantially." It sees the need for annual hikes of about $3-billion until at least 1965. This would put military outlays at about $45-billion as early as fiscal 1960, $6-billion over the current level. The Gaither committee reportedly seeks a boost of $8-billion over this period.

• There should be greater pre

paredness for the threat of limited war. Production of troop transport ships and planes should be boosted; the Army should get money to step up the modernization of its weapons.

• Strategic Air Command base dispersal, missile-launching submarine production, output of long-range ballistic missiles, and the development of early-warning and anti-missile defense systems should be pushed more urgently.

• Procurement of manned planes should be continued at a high rate "into the 1960s."

III. The Pentagon Reacts

In general, the new military budget that will go to Congress next week reflects the greater sense of urgency sounded by both the Gaither and Rockefeller reports. But weapon production plans fall far short of what the two committees—and many in Congress—consider necessary.

For instance, contrary to the Rockefeller report's plea for continued heavy volume aircraft production, the outlook for military procurement of manned planes is for severe slashes.

Nor are there any Pentagon plans to increase production of troop transport planes and ships and Army weapons. Indeed, the prospect is that procurement in these areas will fall.

The new budget does call for greater effort on missile-launching subs, SAC base dispersal, anti-missile defenses, and ballistic missile production.

• **Outlays Up**—Actual defense spending is already showing a marked upturn. Last month, military outlays were running at a $40-billion annual rate—$3-billion over the November rate. Over the next six months, Pentagon budget men anticipate expenditures at an average annual rate of $39-billion.

The rate of new defense orders is also rising rapidly. Commerce Dept. economists have already noted the "steadying effect" of new military contract awards—particularly in the aircraft and missile industry—on the over-all level of manufacturers' new orders. The November level, $26.2-billion on an annual rate, kept even with October.

• **Scientific Team**—This week there was more evidence of progress in pooling technological military efforts with our allies.

The little-known joint U.S.-United Kingdom Scientific Advisory Committee for Ballistic Missiles conferred for two days at the Orlando (Fla.) Air Force Base, then started a two-week swing around major U.S. missile bases, test centers, and manufacturing plants.

The committee was set up in 1955 to exchange basic scientific information on a speedup of research and development of ballistic missiles.

Peter Thorneycroft

Derick Heathcoat Amory

British Cabinet Splits In Budget Dispute

Britain's Conservative goverment this week has a new Chancellor of the Exchequer—plus some new political and economic problems.

The new Chancellor is 58-year-old Derick Heathcoat Amory (picture, right), former Minister of Agriculture and a middle-of-the-road Conservative like Prime Minister Macmillan. He became boss of the British Treasury when Peter Thorneycroft (left), an aggressive young Tory who last September initiated an increase to 7% in the British bank rate, suddenly resigned because of differences with Macmillan over the upcoming British budget.

The new Chancellor, who came into politics from a business background, has a reputation for at least equal ability, more imagination, more humor, and more soft-spoken methods. Although against the outright deflation Thorneycroft wanted, his successor believes in sound money—and may well produce a tough budget in April to prove that the government isn't softening in its fight against inflation.

• **Cabinet Split**—There's no doubt, though, that the Cabinet split has hurt the Macmillan government politically. It will have a hard time keeping the Conservative Party united behind it. Labor leaders now think they can win enough by-election victories to bring the Macmillan government down long before the 18 months to two years its term would normally run.

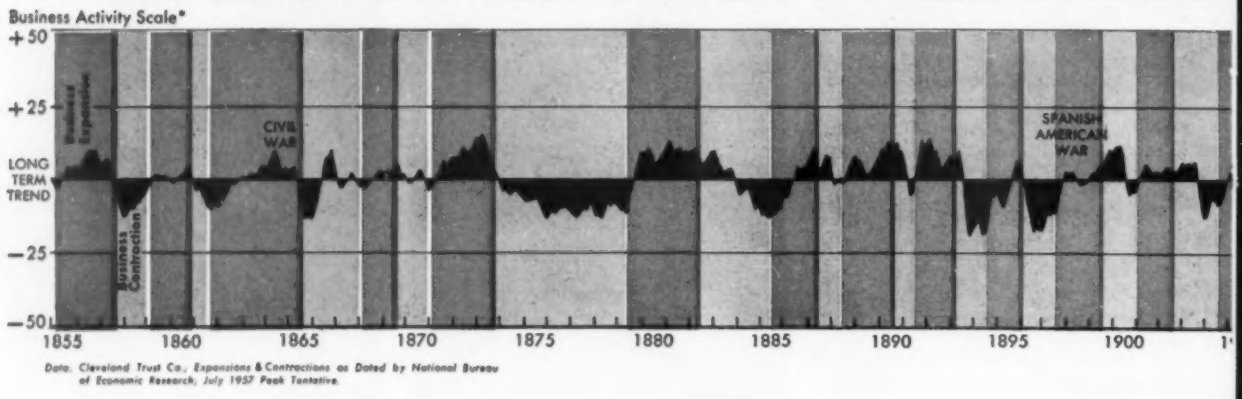
Thorneycroft's resignation also has raised new doubts about the strength of sterling, just as it has steadied on world currency markets. This week there was no more than a flurry in sterling. But traders all over the world again have their eye focused on the pound.

• **Crisis**—The Cabinet dispute came to a head last weekend when the government was drawing up its estimates for the April budget. Macmillan and Thorneycroft professed to be equally concerned about checking inflation and strengthening sterling by two methods—restricting the supply of money and holding back the pressure for new wage increases. Actually, they disagreed over whether to give priority to sound money or to full employment.

Thorneycroft argued that to defend sterling it was necessary to carry out a policy of positive deflation. He accepted the view of most London bankers that you don't get deflation by high bank rates and tight credit if the government goes on raising its short-term borrowing to fill a budget gap. So Thorneycroft insisted that government spending for fiscal 1958-59 be kept exactly at the previous year's level. To save $140-million, all the money that was in dispute, he apparently was prepared to see family allowances cut and national insurance contributions raised.

Macmillan and his colleagues refused to go that far. They decided that Thorneycroft's policy would raise the cost-of-living index and produce much bigger wage demands right in the middle of an annual round of wage negotiations, which so far have been going well for the government.

Wash Out the Over-all Growth—and Here's How Business Has Fluctuated



Data: Cleveland Trust Co.; Expansions & Contractions as Dated by National Bureau of Economic Research, July 1957 Peak Tentative.

What History Teaches About

Cycles have varied widely in the duration of their ups and downs, but history helps figure the odds. Economists are trying to advise businessmen on the length and depth of the current recession. Here's how they see it.

IN THE PAST CENTURY, the U.S. economy has gone through 24 complete business cycles (chart), if you measure them—as does the country's leading center of business cycle study, the National Bureau of Economic Research—from bottom to peak to bottom again. We are now moving from the peak toward the bottom of Cycle No. 25.

What, if anything, can you learn about the probable duration and severity of the current recession if you study the behavior of the other 24 cycles?

• **Many Variations**—First, you learn to be wary of anybody's attempt to set a date for the coming upturn in business by simply assuming a repetition of the "average" cycle of the past. As the chart shows, there has been extremely wide variation in the duration of business expansions and contractions.

Although the average business expansion lasts 30 months, the shortest in the 24 cycles lasted only 9 months, while the longest ran for 80 months. While business contractions averaged 20 months, the shortest took only 8 months and the longest dragged on for 65 months.

Nevertheless, you can get some idea of the probable duration of the present decline by studying the past. Of the 24 business slumps since 1857, only four lasted longer than 24 months. And only one of these (the 45-month decline from June, 1929, to March, 1933) came after 1885. In fact, since that year, four out of five business contractions have lasted 18 months or less, and half have lasted 13 months or less.

Of course, there's no powerful reason for ruling out the business contractions of the post-Civil War period, except that they happened a long time ago. On the contrary, we can scarcely afford to waste these years—they provide a valuable comparison.

I. How Long a Lull?

On the basis of the form of the business cycle for 100 years, the odds then are about 5 to 1 that business should turn up again less than 24 months from when it turned down. And it's 7 to 3 that the bottom will be reached in 18 months or less from the peak of the present cycle.

If you do your handicapping on just the past 70 years, the odds on reaching the bottom of the present recession within 24 months of the last peak improve to 17 to 1, and the odds on a reversal within 18 months go up to 4 to 1.

• **Demarking the Peak**—But that raises a crucial question: What was the upper turning point in this Cycle No. 25?

Many bank letter authors, newspaper economic pundits, and other experts (many of whom insisted until the late fall of 1957 that the boom was still strong and runaway inflation was the imminent threat) have recently announced their discovery that the economy has been in a recession since December, 1956. So, they say, it's almost over already. The evidence for so early a turning point is based essentially on the Federal Reserve Board index of industrial production, which peaked at the end of 1956, as did the similar BUSINESS WEEK index.

However, the National Bureau, which among economists has the status of a Supreme Court for dating turns in the business cycle, looks not only at the FRB index but also at 39 other indicators, including gross national product, retail sales, bank debits, corporate profits, labor income, construction activity, imports, employment, and unemployment. And the National Bureau has tentatively dated the top of the recent boom as July, 1957.

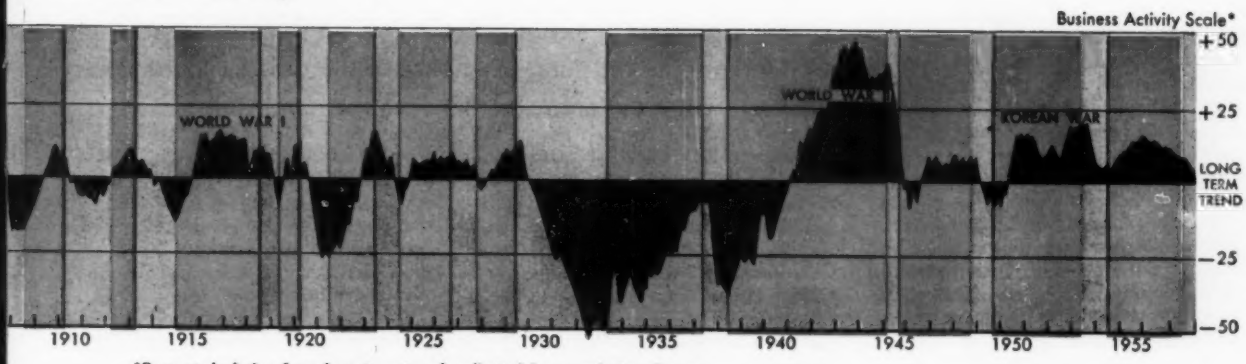
• **Guessing the Bottom**—This means that the recession is now about six months old. So the 100-year odds are now even that it will end by August. They are better than 2 to 1 that the lower turning point will be reached before the end of 1958, and it should be a 5 to 1 bet that the lower turning point will come by August, 1959.

On the other hand, the odds are 7 to 1 against the present recession's reaching its bottom as early as this March; only three of the 24 business contractions lasted as little as 8 months.

Of course, these odds on the future month for the lower turning point would shift if the National Bureau changed the tentative date for the previous peak—for instance, backward toward the end of 1956, when industrial production began slipping.

• **Peak Was Overdue**—The National Bureau takes these odds seriously. At the end of 1956, in its 37th annual report, the Bureau's Geoffrey H. Moore noted: "If the current expansion were to continue through all of 1957, it will have lasted 40 months. In the National Bureau's business cycle chronology, covering the past 100 years, there are only five expansions (out of 24) that lasted

in the Past Century



*Percent deviation from long-term trend, adjusted for population change

Boom-and-Bust Cycles

as long as 40 months. . . . Four of the expansions encompassed major wars, and one was the recovery from the Great Depression. Clearly, if the present expansion extends through 1957 without a setback, it will establish a new precedent."

It seems sure that no such precedent was set by the 1954-57 boom. It turned down, by National Bureau reckoning, after 35 months.

II. How Deep a Trough?

But, of course, a businessman wants to know not only how long the decline is likely to last but also how severe it's going to be—whether it's likely to be merely a replay of the minor contractions of 1948-49 and 1953-54 or is more likely to resemble those of 1929-33 or 1937-38.

Here again you have to be very cautious about applying history to today's situation—but you can get some help on the odds by studying the record of business cycles.

• **Too Early to Tell**—The first point National Bureau economists make is that it's still too early to have much of an idea, on the basis of factual study of the present and past cycles, about how severe the contraction will be. Both major and minor declines have generally started in the same gradual way during their first few months.

For instance, both the 1929 and 1937 contractions started more slowly than the 1948-49 or 1953-54 declines. Four months after the peak in June, 1929, unemployment figures remained unchanged, and four months after the May, 1937, peak, unemployment had increased only 1.2%. In the four months following the November, 1948, peak, unemployment jumped 33.3%; four months after the July, 1953, peak, unemployment was up 29.9%. In the four months from July through November, 1957, unemployment—seasonally adjusted—rose 22.5%.

After their slow starts, the 1929 and 1937 recessions built up a terrific acceleration. From 6 to 12 months after their peaks, they far exceeded the 1948-49 and 1953-54 recessions in rising unemployment, and in falling industrial production, carloadings, GNP, and prices.

That's why the National Bureau economists believe the crucial time to keep an eye on the current recession is from now through the next six months.

III. How Much Bounce?

One element in the record argues that the current recession will be extremely mild—and that is the relative mildness of the preceding expansion. Many economists regard the business cycle's movements essentially as those of a rubber ball—the harder you throw it against a wall, the harder it comes back.

Expansion from August, 1954, to July, 1957, lifted the U.S. economy only 13.9% above its long-term trend line—among the smaller expansions on record. But the National Bureau's research director, Solomon Fabricant, is less cheered by this fact than he is concerned over a different one: the very long stretch (nearly 20 years since June, 1938) that the economy has gone without a severe contraction.

On this point, Fabricant quotes the National Bureau's distinguished founder, the late Wesley C. Mitchell: "After a severe depression, industrial activity rebounds sharply, but speculation does not. The following contraction in business is mild, which leads people to be less cautious. Consequently, in the next two or three cycles, while the cyclical advances become progressively smaller in industrial activity, they become progressively larger in speculative activity. Finally, the speculative boom collapses, and a drastic liquidation follows, which ends this cycle of cycles and brings us back to the starting point."

Fabricant does not read doom into Mitchell's words as applied to the present decline, but he does feel that it points up the need for government policymakers to regard the present recession with special suspicion.

• **Cause for Worry**—Other business cycle specialists are also looking with uncommon suspicion at the present contraction. Bert G. Hickman of the Brookings Institution, after testing all the National Bureau's certified cycles, concludes that "mild cyclical movements are mild because they are not widely diffused"—as opposed to the opposite idea that mild business cycles are not widely diffused because they are mild. By his reasoning, the current contraction may be less mild than the two preceding postwar recessions, because the new one is so widespread among sectors of the economy.

Three months after the 1948 peak, 28.6% of the National Bureau's 21 sensitive indicators were still rising; three months after the 1953 peak, 19% of these indicators were still climbing. But in October, 1957, three months after the July peak, only 5.6% of the indicators were going up. That was a weaker showing than the 6.2% figure three months after the peak was passed in both 1929 and 1937.

• **Housing Trouble**—Asher Achinstein, of the research staff of the Library of Congress, finds additional cause for worry: the fact that the more severe business contractions have taken place during the downward phase of a long housing construction cycle.

The present housing cycle, says Achinstein, probably peaked in 1950, and a

downward trend has followed; in the 1920s, the long housing cycle peaked in 1925.

Achinstein feels that economists must try to establish the extent to which government stimulus for the housing market may moderate the downtrend, but he still believes that the downdrift of the long housing cycle may aggravate new recessions.

The demand not only for housing but for all other durable goods—whether producers' or consumers' goods—Achinstein holds, can be postponed. This could make for a violent contraction in the economy, more than a boost in government spending or a tax cut could immediately offset.

So, he says, the postwar U.S. economy is basically the same as the prewar economy, and not a new model economy that has seen "the breakup of the business cycle," as Harvard's Sumner Slichter argues.

• **Built-In Stabilizers**—"To be sure," says Achinstein, "such a contraction will be cushioned by the automatic stabilizers, the higher floor provided by the size of government expenditures, and by the improvements introduced into our financial structure in recent decades."

He also adds, as do virtually all economists today, that we can "count much more on government determination to pursue monetary and fiscal policies to speed up recovery."

But, he concludes: "These tools are not likely to be adequate when the durable goods and construction industries show sizable contractions. If these conditions should prevail in the near future, a decline substantially greater than any we have had in the postwar period is likely."

• **Pile of Errors**—However, most economists—including those at the National Bureau of Economic Research—as yet find little or no evidence that the present contraction is likely to turn into a hurricane of the 1929 or 1937 variety. They argue that the great collapses of the past resulted chiefly from flagrant blunders of national economic policy or from wild speculation.

There's general agreement among economists—Democrats as well as Republicans—that the Administration, spurred on by defense needs, will pursue policies designed to ease rather than aggravate the recession.

However, there is wide disagreement on how vulnerable the economy is to a more serious drop as a result of "speculation" or over-optimism on the part of both businessmen and consumers after nearly two decades of rising prosperity.

You won't find the answer to that one in the records of the last 100 years. But it should turn up in the next six months.

Fight Over Federal School Aid

Congress is turning a cold eye on the Administration's plan to spur the teaching of science and math. Educators, too, say the proposed financial help isn't enough.

Congress this week has as a major issue the question of how and whether to use federal persuasion and money to lure more students of the nation into scientific pursuits.

The President is as serious about science education as he is about recapturing the lead in strategic missiles. He announced a plan of federal aid 12 days ago. This week, he put the full power of the White House behind the program, largely developed by Marion B. Folsom, Secretary of Health, Education & Welfare.

The program has a large price tag—as big, almost, as the federal school construction program the White House espoused in 1956 and 1957. But this time the President is asking Congress to provide funds for scholarships, teachers' pay, improved testing methods, and other intangibles.

• **Skeptical Legislators**—Congress, under the control of Democrats who are seeking ways to take charge of military preparedness, is receiving the Presidential program with skepticism. Many think it is a jerry-built program, put together under the strain of post-Sputnik hysteria. Others, mostly New Deal Democrats, say the President's proposals are evasive, that there's an equally basic lag in school construction. But a majority in Congress echoes the President's plea to use federal funds as persuasion to expose more young people to the basic sciences, then to make sure that some of them will become the scholars and inventors of tomorrow.

I. The Federal Plan

The Administration's program provides for expenditures of $1-billion in federal funds over a four-year period. About $600-million of this would be provided on a matching basis to the states, with the states' share building the additional spending on education up to $1.6-billion.

The initial year's federal spending, in fiscal 1958-59, would run about $225-million, including some $65-million by the National Science Foundation and $160-million for federal grants by the Office of Education.

• **More Scholarships**—Most of the Office of Education money would go into federal scholarships to get more bright but financially needy high school graduates into college. Folsom proposes 10,000 new scholarships a year—that is 10,000 in fiscal 1959, growing to 40,000 in fiscal 1962. These would be four-year scholarships, so this aid would not end until fiscal 1965, when the 10,000 students who start in fiscal 1962 will be in their final year in college.

Other funds will go for:

• A four-year program of matching grants to state education agencies to help state and local school authorities provide better science and math teaching. Funds could be used at the state's discretion to employ more and better science and math teachers, to buy more lab equipment and other instructional material, or to raise the pay of teachers. Or it could be used to beef up state departments of educations in the science and math field. Only eight states now have coordinators to help local schools improve their science and math curricula, although nearly all states have such people to advise on teaching of home economics, distributive trades, and agriculture.

• Training centers to promote teaching of foreign languages, particularly those of Asia and other areas that are growing in importance to the U.S.

• Graduate-level fellowships—1,000 the first year and 1,500 a year in the next three years to get the better college grads to go on to more advanced training, including preparation for college teaching.

• Direct federal grants of $125,000 to graduate schools—to be matched 50-50 by the school itself, not the state, for expanding the school's plant or staff.

The National Science Foundation will spend its money pretty much to expand existing programs. The foundation now spends some $14.5-million a year on summer teaching institutes, brush-up courses for high school science teachers in their subject, academic-year institutes (a full year at a university for science teachers), revision of science curricula. So far, $300,000 has been earmarked for a project at Massachusetts Institute of Technology to write new updated textbooks for high school physics classes. Plans are being made to launch similar projects for other science subjects.

• **Not Enough?**—The Folsom program looks as if it isn't going to please many interests. The educators—speaking through the National Education Assn. and similar groups—say the program is much too small and won't meet the most urgent needs. NEA wants $1-bil-

lion a year in federal aid as a starter, climbing to $5-billion a year within five years. It also wants legislation permitting tax reductions for funds spent by teachers to advance their own training, and perhaps, tax deduction or exemption for parents who have children in college.

Teachers' groups feel the big need is for higher teachers' salaries and for incentives to get more young people into teaching careers. Generally, the school administrators want decisions on how the money is spent left to the states and local school boards.

II. How Congress Feels

A number of congressmen have spoken out on the aid to schools issue. Sen. Lister Hill (D-Ala.) and most liberals plan to go ahead with their own proposals for a much bigger aid bill.

The Folsom proposals won't be easy to get through Congress. Some basic conflicts are showing up already:

• The 50-50 matching grant device proposed by Folsom favors larger states; the smaller, poorer states will want a different formula weighted more heavily in their favor.

• The integration issue will crop up, and possibly also the conflict over church-state separation. Folsom has done his best to avoid such snares—particularly the charge of federal domination of schools—by designating only the broad uses of federal funds and leaving details to the states and localities. But he may lose some support by failing to be more specific.

Congress is excited about Soviet scientific advances and is likely to demand a federal aid program beamed primarily at training more scientists. The educators, on the other hand, are opposed to such suggestions; they want aid across the board—for liberal arts and social sciences as well as physics and chemistry. They claim that the U.S. is short of all sorts of trained people, not just scientists.

III. At the Grassroots

A national survey by BUSINESS WEEK reporters last week spotlights some of the obstacles to quick acceleration of technical training in high schools and colleges. Initiative in course planning in public schools is left largely to the local districts; many a state director of education told BUSINESS WEEK he couldn't even be sure what the state's schools are teaching now.

In most states, the administration sets minimum requirements that the localities must meet, but these are often so much lower than actual practice that they are meaningless in indicating the actual curriculum. At the same time, the current wave of statewide reviews of education—dating both from before and from after the Sputniks—could take a long time to seep down to the grassroots.

Dr. Alan Waterman, director of the National Science Foundation, told a November conference at the Southwest Research Center in San Antonio: "The problem is not one which we can look entirely to the federal government to solve, for the most fundamental improvements must begin at the grassroots level and are most effectively accomplished there."

• **Specific Reactions**—A handful of specific reactions at the state and local levels are coming to light, with or without the impetus of Sputnik:

• Teacher organizations are taking advantage of the public attention by demanding far higher salaries. In Pennsylvania, for example, the state association wants a minimum of $5,000, compared with $3,800 now and $2,800 only a few years ago.

• Education for the gifted is newly favored over the long-dominant education for the lowest common denominator. School districts in many areas, with state encouragement, are laying out courses for various aptitude levels.

• There's new emphasis on courses that teach facts and principles. In teacher colleges, there's agitation for more courses that inform teachers, in place of courses that teach educational technique.

• And, of course, states and localities are beefing up science and math courses, in some cases to the point where high schools offer courses that were formerly at college level. This means more calculus and analytic geometry for the more talented pupils, more work with statistics, more science laboratory experience.

• **Teacher Shortage**—The bottleneck in all this, it is evident from comments in all parts of the country, is this supply of science and math teachers available to high schools.

Teachers in general are short of demand. They must be recruited from a generation that was shrunk by the Depression, in numbers sufficient to fill classrooms for a generation that was inflated by postwar prosperity. More important, teachers capable of science and math are being lured into industry and government by higher bids.

Tailored-to-Order Weather

Advisory committee warns that, in the interests of national security, the U. S. must take the possibility more seriously.

In testimony before Sen. Lyndon B. Johnson's investigators, Dr. Edward Teller, "Father of the H-bomb," raised the possibility that Russia might reduce the U.S. to a second-class power without firing a shot—if the Soviets should succeed in controlling weather to a point where they could deprive this nation of needed moisture.

This week, a White House advisory committee on weather control—in the process of going out of business after three years—recommended that the federal government take this scientific area more seriously and, for the first time, spend money in an organized campaign to investigate the possibilities.

Retired Navy Capt. Howard T. Orville of Bendix Aviation Corp., headed the White House panel.

• **Evaluators**—The Orville group spent no money on research. Instead, it put its limited staff and funds to work studying the scattered weather modification projects being done in this country by public and private organizations—mainly "rain making."

Now, the committee says, the National Science Foundation should be given authority and money for a federal program of long-range research.

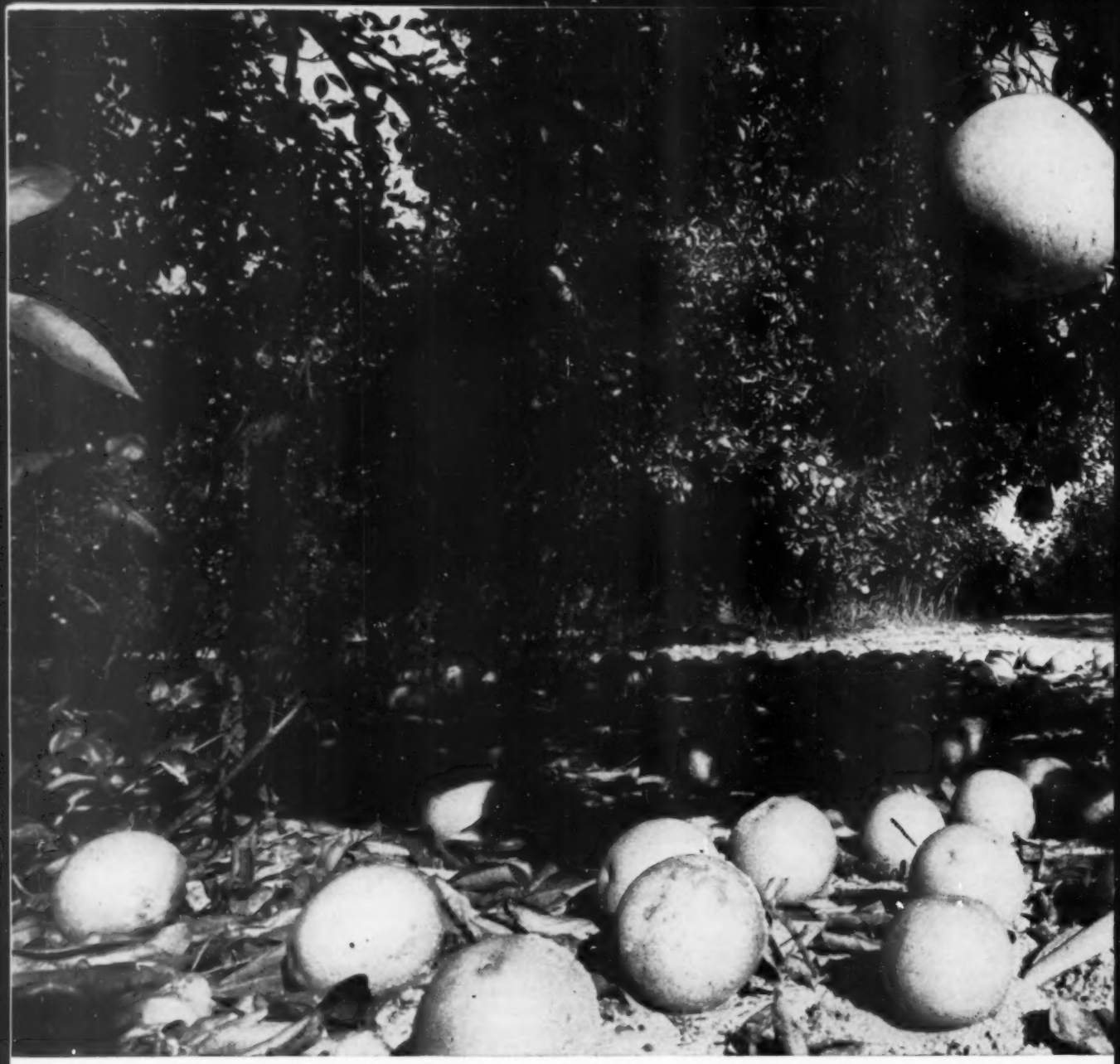
The report puts no price tag on the program, but Orville says privately that it could be profitably organized with as little as $500,000 in the first year. Orville sees the program rising, within three to four years, to the $10-million to $20-million annual range.

• **Limited Research**—Thus far, U.S. research in weather modification has been directed mainly toward increasing precipitation, suppressing hail, and inhibiting lightning.

Informed U.S. scientists say they feel certain that Russian weather research is far more advanced than ours. One weather bureau expert puts it this way: "We have better minds and better instruments, but the Russians are using more minds, more instruments, and more money."

• **Not Too Fantastic**—The concept of human control of weather is still a little on the Buck Rogerish side, but official Washington is no longer inclined to brush it off as too fantastic for consideration. This new state of affairs is due largely to support by scientists of the stature of Dr. Edward Teller and Dr. Vannevar Bush.

Teller, in all solemnity, told the Johnson Senate committee in November that he thinks man will get to the moon before humans will control weather, but weather control is "a possibility, and I would not be surprised if [the Soviets] accomplished it in five years or failed to do it in the next 50 years."



Florida Freeze Thaws Out New

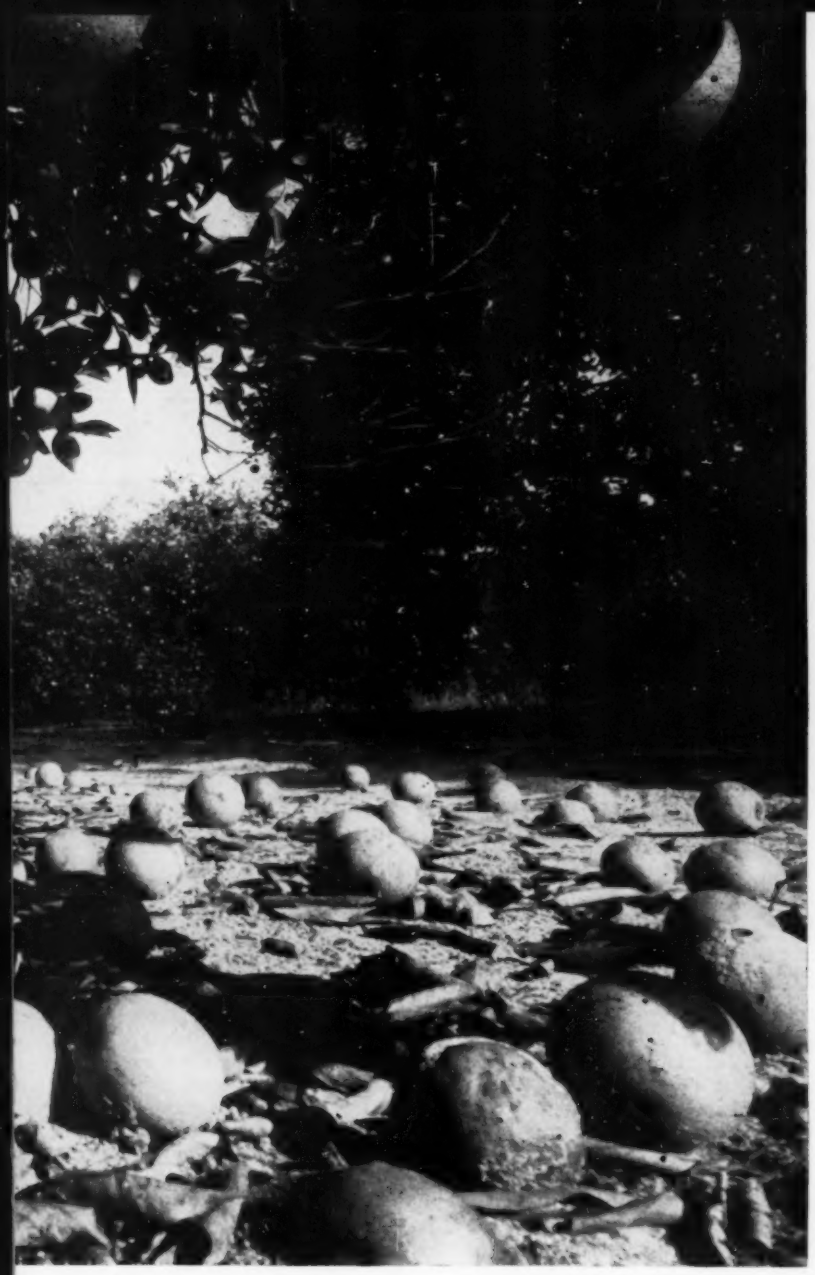
Early in December, the citrus farmers of central Florida had only one worry: Would the bumper orange harvest depress the prices of their sweet money crop? In the rich groves around Lakeland and Orlando, trees sagged under a burden of ripening Valencias and Temples, and the farmers had to prop up the laden branches. On Dec. 10, the U.S. Dept. of Agriculture happily predicted a record yield of 142.5-million 90-lb. boxes.

The next day, the USDA estimates were fit only for the rubbish heap. And so—it seemed—were most of the oranges. The mercury plummeted to the lowest readings in more than a decade—and stayed there. In Ocala, it was 12F. In some areas, the chill ruined as much as 40% to 60% of the mid-season crop. And then came hot weather—the worst thing that can happen after a freeze, because it speeds spoilage of the already damaged fruit.

Within a week or two, oranges softened by the cold and thaw fell squishily to the ground, and trees lost their leaves (picture, above). The Florida Citrus Commission estimated a statewide loss of at least 30% to mid- and late-season crops, and there was talk that damages might run as high as $60-million. And this was before the threat of another freeze at midweek.

• **Salvage Job**—After the freeze, crews scuttled through the groves to rescue as much fruit as they could and get it to market before it spoiled. For fear bad fruit might leave the state, the Citrus Commission slapped a two-week embargo on sales and shipments. So, in the midst of the holiday rush, gift cards went north in place of the usual fat crates of oranges and grapefruit.

But despite the embargo, the biggest buyers of oranges—the concentrators, who turn out some 75-million gal. of frozen orange juice concentrate per year



POURED into plastic-lined drums, orange juice concentrate is frozen and stored. New techniques will guard its quality in storage.

SOFTENED by the freeze and ensuing thaw, oranges litter ground of a grove near Winter Haven, Fla. Temperature fell as low as 12F.

Juice Tricks

—went right on squeezing. It was a real gamble, because the Citrus Commission had ruled that no more than 5% of the fruit going into concentrate could be freeze-damaged, and the processors were using considerably more than this maximum proportion. Since they were forbidden to sell the concentrate anyway, it had to go into barrel storage at −10F.

The concentrators were sure that by

TRAILERS full of fruit pile up at Florida concentrate plant after restrictions on use of freeze-damaged citrus were liberalized.

controlling quality more rigidly than ever, the product would be satisfactory—even though nearly all of them admit that concentrate from freeze-damaged fruit is slightly inferior in flavor and more likely to spoil in storage.

• **Relaxed Rules**—The processors won their gamble Dec. 30 when, sipping sample glasses of orange juice, the Citrus Commission members told them concentrate could come from as much as 25% damaged fruit if the end product met the industry's taste and quality standards. With that news, the growers resumed picking with a will.

In the meantime, USDA inspectors thoroughly sampled the groves, found that 47% of the unharvested early- and mid-season oranges were too damaged to use for fresh fruit. This spurred the Citrus Commission into three new steps on Jan. 3:

• Extending for another week the liberalized ruling on use of freeze-damaged fruit by the concentrators.

• Asking the federal government to buy $10-million worth of damaged oranges for use in cattle feed.

• Raising to 50% the proportion of stored juice packed during the embargo that can go into concentrates.

Perhaps more important for the long run, the commission passed a resolution urging Florida to devise a more accurate method of testing freeze-damaged fruit destined for concentrate. Present standards are based on marketing fresh fruit.

• **Pair of Innovations**—These criteria may be affected even more by two refinements in concentrating orange juice announced jointly by Minute Maid and Union Carbide Development Co., a division of Union Carbide Corp. The new methods, the companies claim, will greatly reduce deterioration of the concentrate during storage—particularly important when damaged fruit has been used. In one of them, inert gas is used to protect the juice from air oxidation while it's going into cans. In the other, pulp of the oranges is handled and treated in a new way that controls the degrading effects of enzymes in the concentrate.

Together, says R. E. Cornwell, president of Union Carbide Development, the two methods produce a vastly superior juice and increase yield about 5%. For a total cost of less than $100,000, he added, a 5-million-gal. plant could be adapted to the new processes this season.

Originally, the developers had not intended to introduce the processes until next year—or whenever they were proved commercially successful beyond a doubt and the patents were thoroughly cleared. But Carbide, which administers the patents, changed its mind because the methods would make it possible to recover more damaged fruit and to increase the quality of juice dramatically.

Ford Grabs '57 Sales Record

New champ in auto industry pulled ahead of Chevy by about 25,000 registrations. But Chevy—already off to a flying start—expects the second-best year in its history.

The automobile industry has a new champ. Ford, after trying since 1935, finally won a clear-cut sales victory over Chevrolet in 1957. Even Edward N. Cole, Chevrolet general manager and General Motors vice-president, concedes that Ford's margin for the year—when final registrations are totaled next month by R. L. Polk & Co.—will be between 25,000 and 30,000.

• **Hot Competition**—Whether the new champion can successfully defend its crown this year already is a matter of speculation. The 1958 Chevrolet got away to a flying start. For the first 20 days of December (latest period for which figures are available), Chevrolet sales took 30.8% of the total market. Cole says that in December Chevy sold more cars than in any other December in its history. James Wright, Ford division general manager and a Ford Motor Co. vice-president, confirms that in 1958 model sales, Chevrolet is ahead of Ford. Since announcement in November, Chevy has attained a market penetration of 28.8%—good enough to win if maintained for the year.

While Ford has revised downward its original estimate of the market for its 1958 cars, Cole says Chevrolet could well wind up with its second-best year. He hopes to sell 1,625,000; Chevy's best year was 1955, with 1,640,000.

Pumping out cars for its big December, Chevrolet did manage to squeeze by Ford to retain its title of highest producer. For the year, Chevrolet turned out 1,522,550 passenger cars; Ford's production was 1,522,406—144 cars shy of Chevrolet. As usual, there is an argument. Ford claims that in cars for domestic sale only, it still out-produced Chevrolet. Chevrolet is not replying to this claim.

• **Production Down**—Chevrolet's optimism about sales in 1958 is not shared throughout the industry. The automobile Manufacturers Assn. reports that 1957 passenger car production totaled 6,119,307. The mid-December sales pace was at an annual rate for 1958 of 5.5-million. Ward's Automotive Reports says that the industry's preliminary production schedules call for output of only about 5.3-million cars this year, with first-quarter production a bit under 1.5-million units.

That level of production could still see sales in 1958 of 5.8-million (approximately the total for 1957 sales of domestic cars) because the industry entered this year with stocks in dealers' hands variously estimated at from 500,000 to 700,000.

• **Runners-Up**—With Chevy and Ford far ahead, the rest of the industry lined up like this in 1957, according to AMA production figures, which, except in a few cases, also indicate the order of finish in the sales race:

Plymouth, 655,526; Buick, 407,271; Oldsmobile, 390,091; Pontiac, 343,298; Dodge, 292,386; Mercury, 274,827; Cadillac, 153,236; Chrysler, 118,733; De Soto, 117,747; Rambler, 102,178; Studebaker, 67,370; Edsel, 54,600, Imperial, 37,946; Lincoln, 37,870; Packard, 5,495; Nash, 3,561; and Hudson 1,345. Also included in the AMA over-all production figure is 3,871 Checker cabs.

FHA Makes It Easier To Finance a New Home

The Federal Housing Administration is taking steps to bring all of its 75 field offices up to a more liberal standard of judging mortgage credit risks.

The effect will be to loosen regulations in a few field offices that have been turning down mortgages on the basis of what Commissioner Norman Mason describes as outdated rules.

Mason's directive comes on the heels of Pres. Eisenhower's decision to release $177-million in federal funds to shore up a sagging housing industry.

Some lenders believe the FHA stress on the standards will have a direct effect on building starts as well.

"The field offices are further behind Mason than is generally realized," one lender commented. "We think the FHA action means many borrowers who would have been turned down in 1957 will get an O.K. in 1958."

• **Suggested Standards**—All through 1957, Mason hammered at the field offices in an effort to assure a single set of credit standards. At yearend, he sent out a letter restating what he considers to be up-to-date lending standards.

(1) Many families can meet housing payments up to one-third of their first $3,000 of after-tax income, plus one-fifth of their income above $3,000.

(2) No mortgage for a house costing over $12,000 should be turned down merely because kitchen appliances, wiring or insulation are included in cost.

(3) The cost of operating air conditioning equipment should not be a cause for rejecting applications.

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COMPANY	NO. OF YEARS INSURED	TOTAL SAVINGS OF INSURANCE
Sprague Electric Co.	8 yrs.	$287,553
Acushnet Process Co.	8 yrs.	227,083
Continental Mills	8 yrs.	66,000
The Lionel Corp.	5 yrs.	165,995
Wolverine Tube	9 yrs.	145,352
Keasbey & Mattison Co.	6 yrs.	418,968
Heintz Manufacturing Co.	9 yrs.	465,912
Hamilton Paper Co.	8 yrs.	83,613
The Freiberg Mahogany Co.	7 yrs.	49,907
Avondale Mills	7 yrs.	135,000
Alice Manufacturing Co.	6 yrs.	63,555
Huttig Sash & Door Co.	6 yrs.	135,644
The Midland Steel Products Co.	6 yrs.	329,654
Barber-Colman Co.	6 yrs.	454,471
Sealed Power Corporation	6 yrs.	164,767
TOTAL SAVINGS FOR ALL 15 COMPANIES		$3,193,474

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Roads: The Web Begins to Grow

● The federal highway program boasts 1,200 miles of completed interstate roads 18 months after its start.

● Rising prices have boosted cost estimates 30%, but no tax changes are contemplated now.

● Work is continuing pretty much on schedule, although a host of problems still must be solved by Congress.

After some 18 months of operation, the nation's 100-billion dollar highway program is running pretty much on schedule. That's what Commerce Secy. Sinclair Weeks and Federal Highway Administrator Bertram D. Tallamy told a Senate Public Works Subcommittee this week.

• **Progress Report**—They reported that, to date, the roadbuilding program has produced more than 1,200 miles of interstate highways, with another 2,000 miles under construction. The over-all program—billed as the biggest public works project in history—calls for 41,000 miles of interstate highways, plus a network of auxiliary roads.

• **Economic Prop**—As the program takes hold, too, it is becoming a solid economic prop. Before next year, the highway builders—contractors and highway departments—will lay out more than $2-billion for a list of basic products ranging from dynamite to bridge steel and paving materials.

Government officials forecast total highway expenditures for 1958 of about $5.5-billion—up nearly $800-million above last year. This includes right-of-way purchases, labor, materials, and other items. Spending is expected to continue upwards for the next couple of years to a level of some $6.7-billion annually. This will hold for several years, then taper off as the program nears completion.

I. Revised Estimates

But, while some of the thorny problems that developed at the outset of the program have been settled, new ones are cropping up. Roadbuilding costs, for example, have climbed some 30% over first estimates. Originally, the planners figured the interstate highways—financed on a 90% federal, 10% state matching basis—would cost around $27-billion over the 13-year construction period. But now, it looks as if the cost will be closer to $37-billion and construction time will be stretched out beyond 1969.

Despite the price rise, officials say there is no immediate need to alter the user taxes on gasoline, tires, and other motor products that were legislated to pay for the new roads. They report there is still more than enough money in the highway trust fund, set up to administer the taxes, to pay for current construction. They want to let the program continue on its present basis for a while longer before making changes.

Since mid-1956, some $2.5-billion in taxes have been pumped into the trust fund, and around $1.7-billion of this amount has been doled out to the states. That leaves a balance of around $761-million.

Currently, too, tax input is reportedly running a good 10% over original estimates. For the 18-month period as a whole, however, the amount of taxes collected is fairly close to the original estimates. The levies fell short of estimates in the early stages of the program, then picked up.

II. Unresolved Issues

Although there is a series of major issues on the road program that must be decided by Congress sooner or later, only one item definitely has to be settled this year. The legislators must decide how much money is to be earmarked over the next couple of years for building the so-called ABC—primary, secondary, and urban—highways.

The ABC highways are the farm-to-market roads that augment the interstate system. Construction costs are borne on a 50-50 matching basis between the states and the federal government. Under the 1956 Highway Act, Congress approved money through fiscal 1959 for their construction and from then on will handle allocations on a two-year basis. This differs from the setup for interstate highways that are programed through the entire length of the construction program.

• **Money Dispute**—But, there is a fight looming up over how much money is to be set aside for the ABC roads. The federal share of the cost of building these roads is paid for out of the highway trust fund, and they get first crack at the money before any is used for the interstate highways. Currently, some $850-million is allocated for this road construction, and it will be stepped up to $875-million for fiscal 1959.

The Administration would like to level off money for the ABC roads at $900-million a year for the balance of the 13-16 year roadbuilding program. But, there is growing grassroots opposition to such a limitation. Rep. George Fallon (D-Md.) wants to earmark $900-million for these roads in 1961. And, in an election year, it's not likely that the legislators will run counter to back-home desires.

• **Additional Controversies**—Here are other highway issues still unsolved and sure to be argued in Congress:

• Control of billboards along the new highways. The issue is whether to legislate laws banning them from being placed along the interstate roads, or to leave control to individual states.

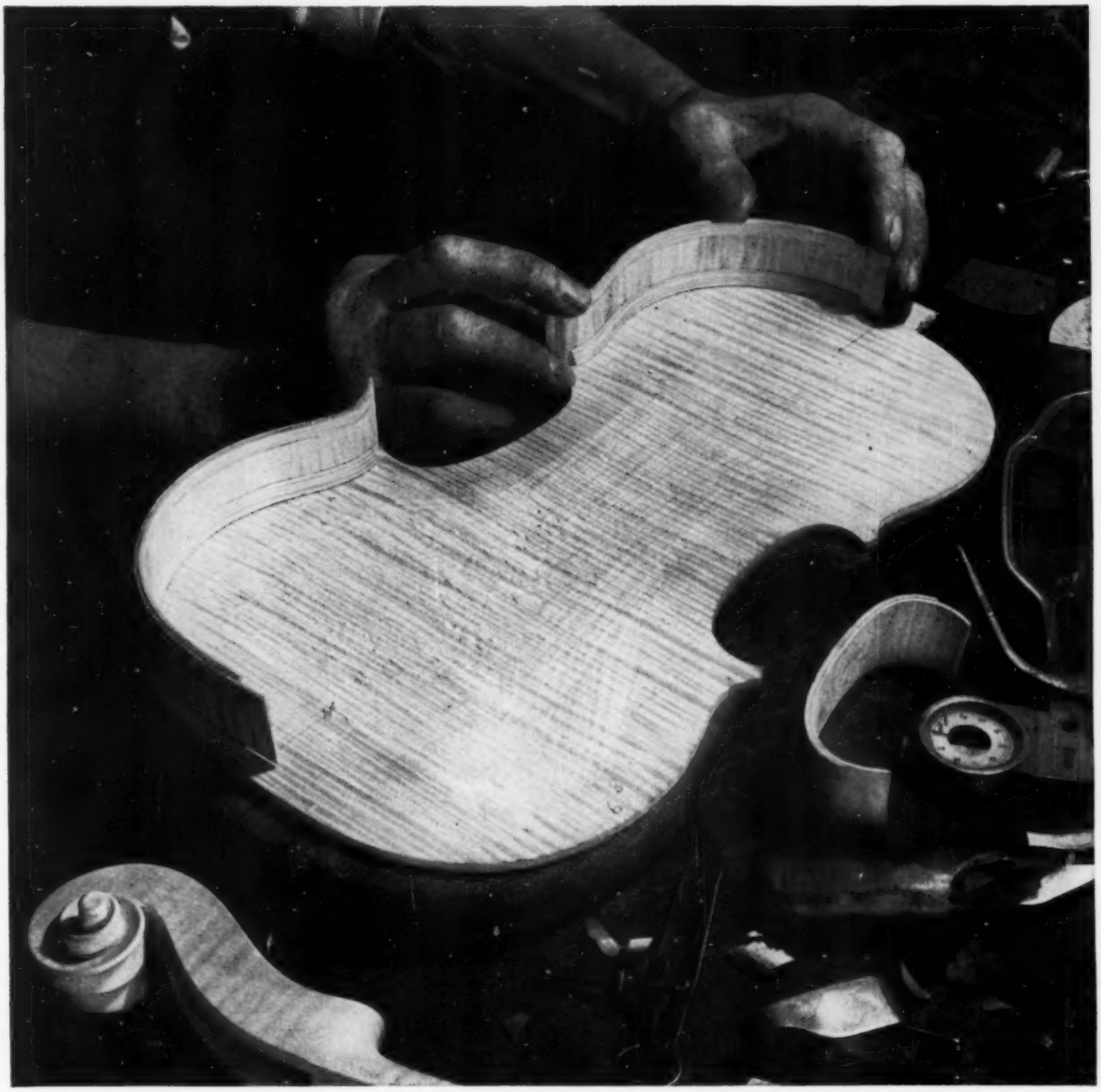
• There is growing opposition to federal reimbursement to states for paying the cost or relocating utilities along the new highways. The 1956 Highway Act provides for reimbursement to states that normally pay these costs. But, the Administration thinks the controls should be tightened and relocation costs paid only under certain conditions.

• Reimbursement to states for toll roads and freeways that are incorporated in the new interstate highways. Congress directed the Secretary of Commerce to make a study on the roads that could logically be included in the new road system and report back to it with results. This has been done, with around 10,859 miles of highways eligible to be included. Construction cost of the roads is estimated at around $6-billion. About 2,000 miles of these highways are toll roads. The problem is to decide how much to pay the states for the roads. Also, some of the states may oppose the incorporation of their toll roads in the over-all system.

• **Apportionment of Funds**—Sure to get attention, too, is the shift in criteria for doling out money to states for building the interstate roads. By law, states were given their share of money for the first three years on the traditional apportionment method, based on area and population.

From 1960 on, however, the money is to be divided among the states on a "needs" basis. For example, if a state has 10% of the total interstate mileage left to build, then it is to get 10% of the money available.

But, some states have advanced faster than others in getting their road mileage under construction. The new method means that they, in effect, will be penalized while the slow-starters will benefit. Congress is sure to take another look at the matter.



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In Business

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Anti-Bias Law in Private Housing Leaves New York Landlords Wary, Growling

New York organized landlords this week settled down to watchful waiting on the city's new ban on bias in private housing; meanwhile, they breathed a spot of fire, for the record.

The law, which goes into effect on Apr. 1, forbids landlords to pick their tenants on the basis of race, religion, or national origin in private dwellings housing three or more families, or in one- and two-family houses that are parts of developments containing 10 or more units.

The landlords, charging that the law will ruin mortgage values, threaten to test its constitutionality. But such a test may be long in the coming, for the law itself provides no criminal penalties, but sets up an elaborate procedure whose end product, after long delays, might be a nip from the teeth in a contempt of court citation. Privately, many landlords say that the vast majority will successfully evade the law, though unlucky individuals may be "crucified."

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Congressmen, FCC Prepare to Face Test Dose of Subliminal Advertising

Congressmen and Federal Communications commissioners will be exposed on Jan. 13 to the alleged perils of subliminal advertising—TV ads that flash by so fast that the viewer is presumably influenced without realizing it.

The closed-circuit demonstration will be staged over the Washington facilities of WTOP-TV by Subliminal Projection Co., a New York outfit that is pushing the controversial technique. It's all part of FCC's investigation to determine whether it should ban subliminal ads from the airwaves (BW—Nov.16'57,p125).

• • •

Installment Debts and Savings Rise; Economic Signs Tell Many Stories

The nation's economic indicators were busily metering away this week. Among their data:

The Federal Reserve Board reported that **installment debt,** seasonally adjusted, hopped up another $163-million in November, though the climb was slower than the average of earlier 1957 months. . . . **Personal savings** in the third quarter reached $4.7-billion, says the SEC. For the first nine months they were $13.8-billion, topping the 1956 period by $3-billion.

Housing contract awards in November topped the 1956 month by 3%, for the fifth straight monthly gain, says the F. W. Dodge Corp. **but non-residential contracts** were off 9%. . . . The Assn. of American Railroads says **1957 carloadings** were 6.2% below the previous year. And AAR predicted a further 3.8% drop in first-quarter 1958.

The Agriculture Dept. says that in the 15 months ended Sept. 30 the U.S. pruned $1.4-billion from its **farm surplus** thanks to a record $5.3-billion in disposals. . . . Goods, services, taxes, and interest were nicking farmers' pocketbooks at a record rate at mid-December, the department said.

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Power Industry Expansion Expected To Reach Annual $5-Billion by 1967

U.S. industry flexed a few more muscles this week. The Edison Electric Institute predicted that **the power industry as a whole would spend $3.9-billion on expansion this year,** with a record 16.2-million kw. of new capacity going into service. Last year, the spending was $3.7-billion, and EEI officials predict it will average over $4-billion for several years to come, peaking at an annual $5-billion by 1967.

Telephone companies also planned hefty growth. **Pacific T&T** is scheduled to spend $300.6-million on more and better facilities in Southern California in the next two years, while the **New York Telephone Co.** has earmarked $251-million for this year and **Rochester Telephone Corp.** has $13-million-plus projects for 1958.

Gulf Oil Corp.'s spending plans for the year are expected to cost a record $692-million.

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Fox Film Scenario For Its Lot Calls for City Housing 37,000

A development that may ultimately cost around $400-million has been announced by 20th Century-Fox Film Corp. for its 284-acre movie lot in West Los Angeles.

Fox will spend $15-million to pack its production facilities into a 79-acre corner of the area. The rest—minus some land leased for oil drilling—will become a planned city designed to house 37,000 people. The project includes 18 apartment buildings, a 1,000-room hotel, four office buildings, and a shopping center. Four apartment towers will be started first.

Fox officials say the plan does not mean that film production will be cut.

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Business Briefs

The Greek shipping interests of A. S. Onassis have **canceled orders for three 47,750-ton tankers.** Sun Shipbuilding & Drydock Co. says the cancellation cuts its backlog of orders back by a full year.

Harvey Machine Co. (BW—Nov.3'51,p62; Feb.7'53, p122) is changing its name to Harvey Aluminum this week. Founded in 1914, the company has become a primary producer of aluminum (at the Dalles, Ore.) and a fabricator (at Torrance, Calif.).

SHADOW-FREE lighting is pointed out by Mr. Steiner, standing at a milling machine. Notice, in the outlined area, the complete absence of shadows even inside the housing of the indexer.

"$19,800 G-E Power-Groove lighting system paid for itself in 3 months!"

Shadow-free lighting increased worker efficiency 10%

"When we decided on G-E Power-Groove lighting for our 100 production people in the new plant, we did it mainly for worker comfort and safety. But the men weren't the only ones who benefited from it. Immediately, work efficiency jumped a full 10%—which was the same as slicing 10% off our payroll. Based on just the direct labor value of this gain the system has paid for itself in less than three months. And from here on, it becomes a *400% return on our investment every year!*" This statement is from Bill Steiner, Ass't. to the Vice President of Erickson Tool Co., Cleveland, Ohio.

8-FOOT POWER-GROOVES were used; fixtures are 10′ high, the rows are on 10′ centers. This gives a comfortable 160 footcandles at machine level. Supplementary lighting is no longer needed, and workers have high praise for the system.

G-E POWER-GROOVES give nearly twice as much light per tube as High-Outputs—2½ times as much as 8′ slimlines. You can get more light per fixture, with fewer parts to maintain, and save 5 to 20% on initial investment. Get the whole story on the new G-E fluorescent lamp design —and see how you can get a higher, more economical light level, too. General Electric Co., Large Lamp Dept. BW-18, Nela Park, Cleveland 12, Ohio.

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WASHINGTON OUTLOOK

WASHINGTON BUREAU
JAN. 11, 1958

Congress will vote Eisenhower's defense budget—O.K. the start on a new arms spending rise that may well carry into the mid-1960s.

A return to deficit financing is a good bet. Current softness in business will cut Treasury receipts at a time when expenditures will be turning up. The budget that goes to Congress next week will show a balance. But the margin will be slim and it will be many months before the picture comes into close focus. By that time, red ink may again be showing up in the Treasury's books.

The debt ceiling will be raised in anticipation of deficit financing. The Treasury may be able to live under the present $275-billion lid through June 30, the end of this fiscal year. The big doubt is about fiscal 1959.

—•—

An increase in taxes will be talked. You are getting some of this already —from ex-Pres. Harry Truman and other Democrats. And you will get more as this session of Congress wears on and it becomes clearer that the defense spending rise is not just a one-year affair, but will carry on into the future. Support for an excess profits tax will grow. But the prospect is that Congress will do nothing about it in the Congressional election year. By waiting until next year, it will have a much better picture of just what the space race with Russia means in budget terms.

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Business implications of the spending rise are clearing up.

Defense outlays already are on the rise. The hold-down ordered by the White House early last fall relaxed shortly after the first Red Sputnik. The December spending rate was near $40-billion, up about $3-billion from November.

The rate of contract letting will show a fast rise. The estimate is that defense orders for hardgoods will approximate $10-billion over the next six months, compared with some $14-billion let in all of fiscal 1957. Note Eisenhower's request on the opening day of Congress for an extra $1.2-billion for defense. It won't be spent in this fiscal year, of course. But it will be used to place orders for future delivery.

Is a new round of price inflation ahead? White House advisers are very cautious in answering this question. They use a lot of "ifs, ands, and buts." But reporters making the rounds of the government's forecasters get a very definite impression that before 1958 is over, most price charts will be reaching into new high grounds. The point most of the experts make is that major expansions in government demand always puts up-pressure on prices.

Here's how Washington now figures the business outlook, in the light of the changed spending prospects:

The first half of 1958 will show softness. The expectation is that the downdrift will continue, perhaps until midyear. Statistics on such things as unemployment and production will be on the disappointing side.

Then there will be a pickup. Congress will have made its decision on how much can be spent for defense in the 1959 fiscal year. This, in turn, will give some indication of what can be expected on the defense side in the next several years. The rate of increase will be substantial. The impact will come on the heels of production adjustments now taking place. The Washington feeling is that by midyear the business mood will swing to

the optimistic side, influenced by the shallowness of winter and spring adjustments and the fact that government spending will be pointing sharply up by then.

—•—

Is the spending turnabout aimed at the recession or Russia?

The answer is Russia. And it is important that this be understood. It involves basic ideas in the Eisenhower Administration—the plans to fight recession if and when this becomes necessary.

Tax cuts were in sight before Russia demonstrated its leadership in space. The Administration was working on a business stimulant program based on reductions in tax rates—especially rates on individuals. The idea was to transfer spending ability from government to consumers, via lower taxes. Now, of course, the reliance will be on bigger government spending.

You will get the pitch in Eisenhower's economic report, now slated to reach Congress on Jan. 20. The attention-getting chapter will be on the economic outlook.

This will be a long-term look ahead. The short-term impact of rising defense spending will be recognized. But the report will go beyond this and cite the need of business action on two fronts: (1) research, which will bring out new products to entice consumer spending, and (2) spending for the new tools and plants that will be necessary to produce the new consumer items. The report will imply—without saying so—that consumer coolness to autos and other major consumer items last year was due to the lack of appealing models—lack of interest in old products, with new faces painted on.

—•—

A political attack faces the economic report. The Joint House-Senate Economic Committee plans extensive hearings. The main attack will be against the failure of the Administration to spell out what it will do in event the current recession should fail to respond to higher spending and thus raise the threat of a real decline. But this will be mostly politics. Even the Democrats want to see what the higher spending will do to the business trend before they come out with any remedies of their own.

Note the mood of Congress—anger, uncertainty in both parties.

Prospect is for a short list of actions. Long-term observers here in Washington predict that final legislation will be held to a minimum. Behind this forecast is the knowledge that when Congress is upset—uncertain about leadership and the feelings of the voters at home—it does no more than act on the bare essentials. This means a slate limited largely to money bills and extension of laws that otherwise would expire. The priority will go to defense—financing of the space race with Russia.

You will see a battle for leadership. Democratic Speaker Rayburn and Senate Leader Johnson won't go easy on Eisenhower. Rayburn took an unprecedented action and put his Congress-opening news conference on the record. In effect, it was the Democratic leader's own State of the Union message, delivered two days ahead of the President's. Rayburn gave notice that he and Johnson are going to try to take command—to tell the Administration what to do. Sen. Johnson went even further: He staked out control of space as his personal program—just about as cosmic a platform as Washington has seen in recent times. Indeed, the insiders see it as the platform of a Presidential candidate in 1960.

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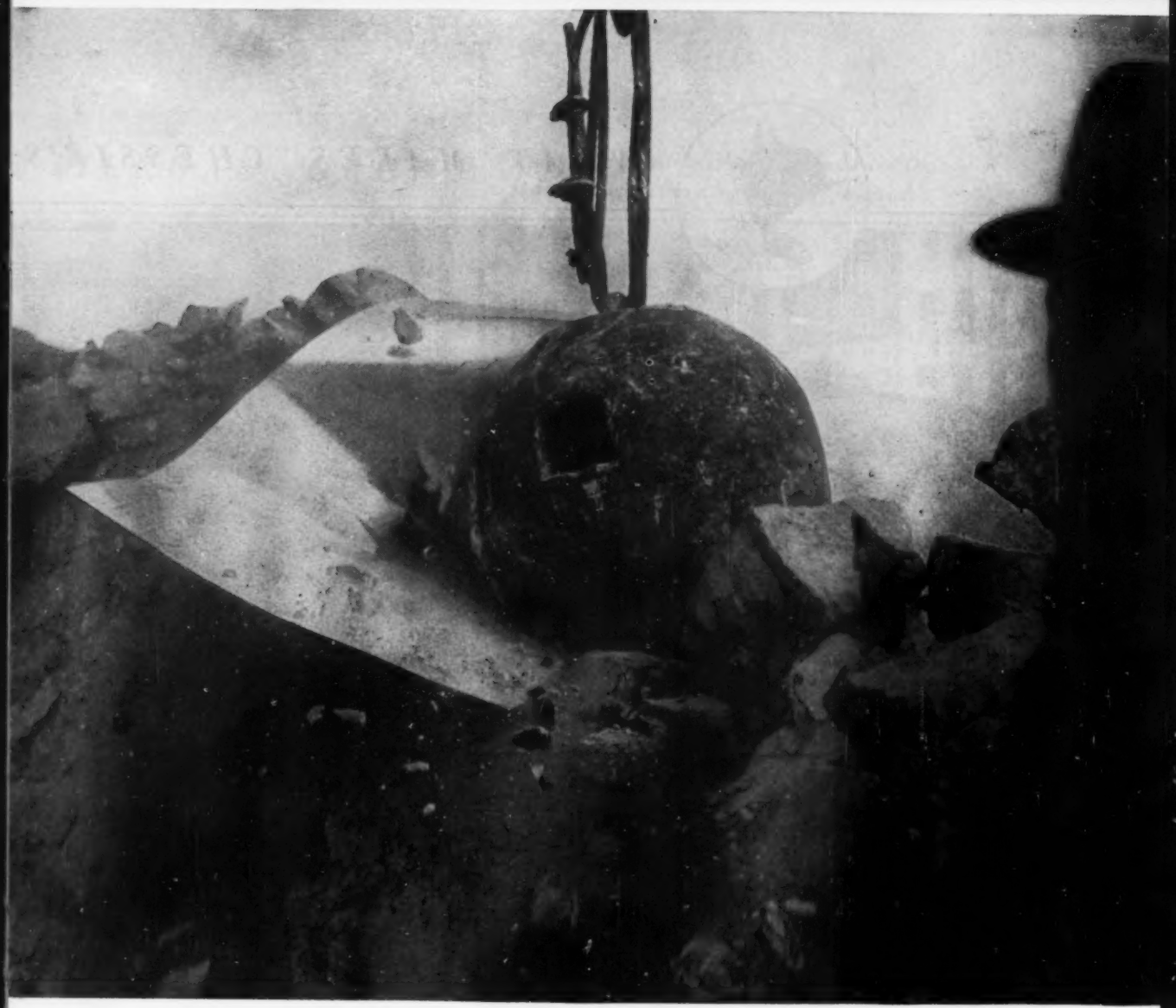

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1957 FLASH ANNUAL REPORT
January 2, 1958

RAILROAD GROW? *One of a series telling what Chesapeake and Ohio is doing to make this a bigger, better railroad.*

Things move fast on the C&O

On January 2, 1958—first business day of the New Year—Chesapeake and Ohio published for its 90,000 shareowners a flash annual report of its 1957 operations. According to financial editors and security analysts, such fast reporting for a billion dollar corporation "makes corporate history".

This up-to-the-minute reporting is just one part of a continuing forward looking program to give Chesapeake and Ohio shippers consistently superior transportation service. In addition to the modern coal classification facilities at Russell, Ky., a new fully automatic yard for merchandise freight goes into operation there this month. This $5 million facility electronically classifies an endless stream of merchandise freight cars with push-button speed and measured control.

Thanks to the new Car Location Information Center—CLIC for short—shippers know that C&O traffic offices can tell them the location of their shipment almost instantly.

The capacity of C&O's coal handling facilities at Toledo, which last year established an all-time record of 18.7 million tons, will be substantially increased by the addition of an $8 million pier now under construction. And at C&O's Port of Newport News, Va., export coal dumping was up one-sixth over the year-before record. Also, at this port a just-completed bulk cargo pier, most modern on the Atlantic coast, unloads ships faster than a ton a second.

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ANOTHER GOOD YEAR FOR CHESSIE'S RAILROAD

Operating Revenues (millions)	1957	1956
Coal and coke	$233	$219
Merchandise	168	170
Other	31	30
Total operating revenues	$432	$419
Expenses, taxes, etc.—net	$364	$352
Net income	$ 68	$ 67
Earned per common share	$8.36	$8.28
Dividend paid per common share	$4.00	$3.625

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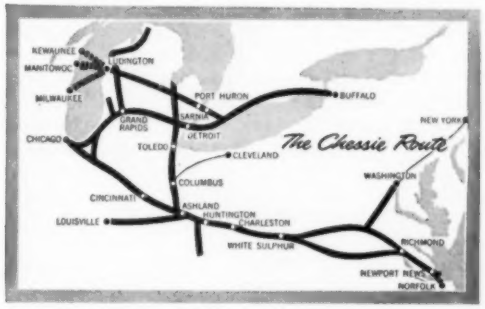

RESEARCH

New Light on Work of Hormones

● Chicago scientist finds way to study the elusive hormones through their carriers, the enzymes.

● Another study in Boston indicates connection between abnormal hormone secretion and cancer.

● Still another study in cancer field suggests that normal cells in mature tissue develop a substance that limits further growth, while malignant cells do not.

Under the shadow of Russia's Sputniks, the American Assn. for the Advancement of Science—world's largest federation of scientific organizations—spent its yearend meeting in Indianapolis looking for comparable achievements by U.S. science. It was happiest over progress in medicine.

Scientists shied away from making claims that might sound counter-Sputnik, but their carefully worded papers revealed gains in basic understanding of life and its processes, ranging from the formation of cells to the causes and mechanism of disease.

"Major discoveries in medical research in the U.S.," said an observer at the AAAS meeting, "just can't be anything short of spectacular from now on. We're at the point where many puzzles are beginning to make sense. Just one fact, one clue, and whole parts of the picture will fall into place."

• **Prize Study**—The association's Theobald Smith Award for 1957 went to Dr. Paul Taladay of the University of Chicago for fundamental research in hormones—a field that may supply some of the most significant clues.

Hormones were first known as mysterious products of the glands that can, in tiny amounts, make profound changes in the body. Eventually, researchers were able to isolate some of these hormones and to reproduce them in the laboratory. This made it possible to synthesize many arthritic drugs and the various sex hormones (BW—Oct. 26'57,p112).

Taladay's prize-winning discovery is even more basic. He found out how hormones travel through the body. Like vitamins, Taladay discovered, hormones hitch a ride on another type of body chemical, the enzymes. Enzymes are much larger molecules, made up of thousands of atoms of carbon, hydrogen, nitrogen, and oxygen. They can be studied far more readily than the tiny hormone molecules.

• **Potential Key**—Study of the enzymes that transport the hormones could produce the key to behavior of the hormones themselves. Already, Taladay's work has led to a way of quickly detecting small amounts of hormones in the blood and urine. Quite possibly, a good early test for cancer and arthritis might come out of this technique.

More important in the long run, Taladay's discovery offers help in understanding the whys and hows of cancer, diabetes, and perhaps some forms of mental disease.

Up to now, the action of hormones has been known chiefly by the outward changes they cause in the bodies of people and animals. Sex hormones, for example, were observed to control reproduction, the growth of hair as a secondary sex characteristic, and several other effects; adrenal hormones were known to have something to do with preventing inflammation and with the diseases known collectively as arthritis.

But no one was able to make comparative measurements of how much of which kinds of hormone a healthy person secretes and a sick person secretes. Thanks to Taladay's technique, this comparison should now be possible.

• **Next, Treatment**—It could also lead eventually to new methods of treating a couple of dozen other diseases.

Scientists have long suspected, for instance, that some cancers depend on the presence of certain hormones. Cancer of the breast and of the prostate gland are notable examples. If it were possible to screen out the enzymes that carry the cancer-supporting hormones to a given part of the body, it seems logical that the development of a cancer could be interrupted, that cancer cells would then starve.

• **Lung Cancer**—Meanwhile, Dr. Sheldon C. Sommers of Boston University has found evidence that abnormal production of hormones by the human body may be associated with many lung cancers. His first tests are admittedly fragmentary, but they involve microscopic examinations and cell counts of the hormone-producing glands of 210 men and women who have died of lung cancer and 200 other persons who have died of other diseases.

Sommer's tests show in part:

• In female victims of lung cancer, a marked growth in ovarian tissue and uterine lining indicating overactivity of the female hormone estrogen.

• In both men and women who have died of lung cancer, overgrowth of the parts of the adrenal glands that produce sex and stress hormones.

• **Growth Inhibitors**—The AAAS also heard another approach to the cancer problem, suggested by Dr. S. Meryl Rose of the University of Illinois.

Rose has been studying the question of interaction among cells during their growth. Why, he has been asking, do some cells become the building blocks for eyes, others for muscles, others for skin, and still others for cancerous growths?

Scientists have long known that embryonic cells can be moved and that they will develop to fit their new environment. In many simple animals, cells will regenerate missing parts. Why doesn't this happen in the case of cancerous cells?

Through a series of experiments, Rose thinks he may have found the answer. Healthy tissues that have developed to a certain stage, he suggests, apparently produce inhibitors that prevent other cells from developing similarly, forcing them to become something else.

• **Self-Control**—This theory would account for the benign and malignant growth. Only cells that have become different enough to escape being inhibited by products of the parent tissue continue to grow. This includes cancerous cells.

One would expect this new growth, in turn, to be self-limiting as the concentration of its own peculiar inhibitors increases. And in most cases, Rose believes, this is exactly what happens. In such cases, the growths become benign.

In contrast, malignant tissues are composed of sickly, abnormal cells that die almost as soon as they reproduce. Therefore, they presumably never produce inhibitors in sufficient concentration to sidetrack the formation of similar new cells.

• **Cancer Cure?**—The obvious hope in all this theorizing, Rose concludes, is the possibility that someday a cancer may be cured by collecting its particular inhibitor, concentrating it, and turning it back on the cancer itself.

Much more research along this line will have to be done, of course, before the theory becomes practice. But scientists see a great gain with the elemental knowledge that growth in the human body can be limited by its own products. This finding could be one of 1957's longest steps toward the conquest of disease. **END**

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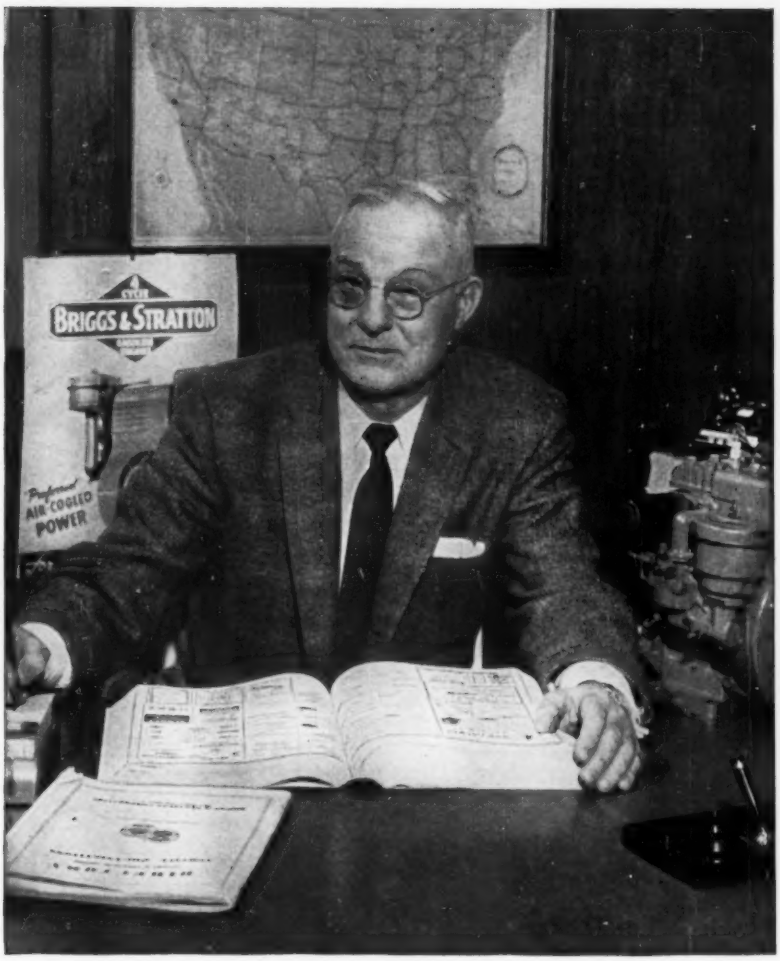

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In Research

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Cancer Vaccine Sought by Salk Team Working at the University of Pittsburgh

Researchers such as Elsie N. Ward (below) who works with Dr. Jonas E. Salk at the University of Pittsburgh, now are experimenting in search of a vaccine to prevent cancer in humans. This is but another phase of the vast medical research going on in the field of cancer and related diseases (page 46). In the picture, Miss Ward is unloading culture tubes that contain tissues for study. Her experiments are materially helped by a new technique that Salk developed while looking for his polio vaccine. This method enables a researcher to measure the cell-destroying capacity of the serum in any tube 100 times as fast as it was possible by earlier methods.

• • •

Latest Idea in Atomic Waste Disposal: Jelly It Like Aspic Before Burial

A new way to bury radioactive wastes without the expense of steel tanks is to be tried by General Electric Co. scientists at the Hanford atomic plant in Richland, Wash. The GE men have developed a milky-white jelly of sodium silicate and a solution containing aluminum. They hope this substance will capture such dangerous atomic byproducts as cesium-137 and strontium-90 and keep them safely in burial pits without need for tanks.

Early experiments indicate that the heat generated by the radioactive mass inside the globs of jelly turns the sodium silicate-aluminum solution to a hard, glasslike material—adequate to imprison the "hot" wastes until they have harmlessly decayed.

• • •

Supersensitive Tool Hears Heart Sounds Too Faint for the Doctor's Stethoscope

An instrument that can detect chest wall movements as small as a half-billionth of an inch has been developed jointly by scientists at the General Motors Technical Center at Warren, Mich., and doctors at the Medical College of South Carolina.

Known as a capacitance heart sound pickup, the device converts an automotive engine pressure gauge into a **supersensitive research tool for studies of faint heart murmurs that may reveal defects in the heart's valves at a much earlier stage than is currently possible.**

The instrument uses a small bell-shaped housing, similar to that of a stethoscope, which is able to convert chest wall vibrations directly into electrical signals. These faint signals are then reproduced on an oscilloscope, where they can be photographed or recorded on tape.

The new machine is so sensitive that, when used in a special soundproof room, it can pick up many "normal" murmurs and sounds caused by the flow of blood through the heart and large blood vessels. These have never been audible in conventional stethoscopic examination. The instrument is being used in heart research at Medical College Hospital in Charleston, S. C.

• • •

Bacteria Tested for New Roles In Recovering Metals, Hydrocarbons

Microbes—just like those that make man ill and then provide him with antibiotics to fight disease—are now having tryouts for a new role at the Bureau of Mines' Eastern Experimental Station, at College Park, Md.

Through the action of bacteria on low-grade ores, the bureau has already achieved promising recoveries of copper, nickel, cobalt, and other metals. **The same process is being tried out for the production of synthetic liquid fuels from oil shale, and for the study of the structure of coal.**

In the recovery experiments, the bacteria—which oxidize sulphur to acid—have permitted metal recoveries many times greater than was achieved in control tests done without bacteria.

In other lab tests at Boulder City, Nev., the use of bacterial cultures has permitted extraction of up to 99% of the manganese in some ores. **And at Laramie, Wyo., microbes are being tested as a substitute for high temperature retorts in the recovery of hydrocarbons from oil shale.**

The Bureau of Mines stresses that all this work has been on a laboratory scale.

• • •

Curing of Brittleness in Ceramics Opens New Uses as Rocket Materials

Various ceramic materials, which have been considered too brittle for the purpose, should now come into widespread use in rockets, according to researchers at the University of California.

Rocket and missile technology has come to have two basic requirements for new materials: **ability to withstand tremendous stress, and effectiveness at temperatures above 2,000F (BW—Oct.19'57,p66).** Many ceramic materials have passed the heat test with flying colors, but have been rated as useless because of their brittleness. Now the California researchers have evolved a method of treatment that makes the ceramics so ductile that they can be bent by hand, without cracking.

MANAGEMENT

Why the Sale of Universal Oil

A unique company is on the block—but New York State has raised questions about paying the trustee. The case is in the courts.

Sometime in the next few weeks, a court decision should be handed down to settle a unique case involving a unique company—Universal Oil Products Co. of Des Plaines, Ill.

Universal is a keystone of the oil industry—even though it owns no oil wells or refineries and sells no petroleum products. It has been a specialist in the research problems of the industry—it currently holds 1,745 active U.S. patents—and made its money by marketing its developments and techniques.

But some confusion hovers around its ownership. UOP was a privately owned company, until it was sold in the early 1930s to a group of six major oil companies. During World War II, the oil companies gave it away—to a bank as trustee for a research fund.

The bank, the Guaranty Trust Co., of New York, is the sole "owner" of the company. It holds all the stock, elects the board of directors. But the income—essentially dividends that are declared—goes to the Petroleum Research Fund, a special fund set up to make grants for "advanced scientific education and fundamental research in any branch of the petroleum field." This fund, in turn, is administered by the American Chemical Society, a professional group of individual scientists, through a committee of 13 members.

• **The Issues**—A little over a year ago, the American Chemical Society and the bank decided that—like the Ford Foundation—they didn't want all the fund's eggs in one basket, and planned to sell much or all of the Universal stock to diversify the portfolio. Estimates of the stock's value ranged from a conservative $50-million on up. The bank, as owner-trustee, asked the court for permission to sell the stock and to collect an additional fee—10% of the sale price—for its services to the company during its 13-year trusteeship. ACS—whose only connection with Universal is to disburse money the research fund receives from the bank—concurred in Guaranty's fee request.

Almost immediately, two court actions were brought to block the sale. The first was by the Attorney General of the State of New York, charging the fee was excessive. The second was by 14 refining companies—customers of Universal—and the Independent Refiners Assn., on the grounds that continuance of UOP in its current form was a vital necessity to the customers themselves. Hearings have been going on in New York ever since.

• **Radical Change**—Both actions underscore the remarkable turnaround in a company that 12 years ago was insolvent, in bad repute in the courts, seemed to be going nowhere, had $44-million in lawsuits, and outstanding obligations of several million.

In 1957, UOP racked up a gross volume of $85-million, with net profits close to $7-million, via license fees for its refining processes, sale of products and services to the oil industry, and construction of refineries. Its stature has grown to the point where its customers feel they have a big stake in it.

For that radical change, Guaranty takes a deep bow. It argues that its actions have gone far beyond the normal requirements of a trustee in putting the bank's prestige behind a doubtful company, finding the right men to run it and the right directors to oversee it, helping with its recapitalization, assisting with customer relations, plus the future work it must still do in sale of the stock.

The Attorney-General's office, as "guardian" for any trust beneficiary in the state, disagrees. It suggests that Guaranty's actions could be expected of any trustee, and that the bank has already been compensated with its $50,000 annual fee. It is now asking that no additional fee be granted—particularly since the Guaranty will continue as trustee for the diversified portfolio that would replace UOP stock.

The refiners are unconcerned with the fee. They withdrew opposition to the sale after a recent three-way agreement with the bank and the company: The stock will be widely distributed, with not more than 2% to any individual investor (except the big institutions); the company will continue its current business for at least 10 years; and it will continue a nondiscriminatory licensing policy.

PRESIDENT Maynard P. Venema presides over a research, construction, and manufacturing complex that customers want left intact.

I. Bone of Contention

The legal battle has now shifted from a question of whether UOP should be sold to a question that could establish a new precedent on the rights and obligations of trustees. In the middle of the hassle—and carefully noncommittal about it—is the company itself.

UOP was created in 1914 to hold the patent rights of a California oilman and inventor, Jesse A. Dubbs, and financed largely by J. Ogden Armour,

Is Held Up

Chicago meat packer, who put up $2-million to develop the Dubbs petroleum cracking process.

Processes devised by Jesse Dubbs and his son, Carbon Petroleum Dubbs, plus others in the organization, gave the company a commanding position in thermal-cracking processes.

The processes were enthusiastically accepted and widely copied. By 1930, most oil companies were either paying UOP per-barrel royalties, or were being sued by UOP for patent infringement. Almost since its inception, UOP had been one of the suing-est companies around; it used to boast that legal fees alone averaged over $500,000 a year.

• **Switch in Operations**—To solve that problem, in 1931, six major U.S. oil companies (Shell, Standard Oil of California, Standard Oil (N.J.), Standard Oil of Indiana, Texas, and Phillips) bought the company from the Armour and Dubbs families for $25-million.

This switched Universal's operation, since half of its former customers were now "owners," with free use of its processes and its service as a research center. For income, UOP turned to the independent refiners as its licensees.

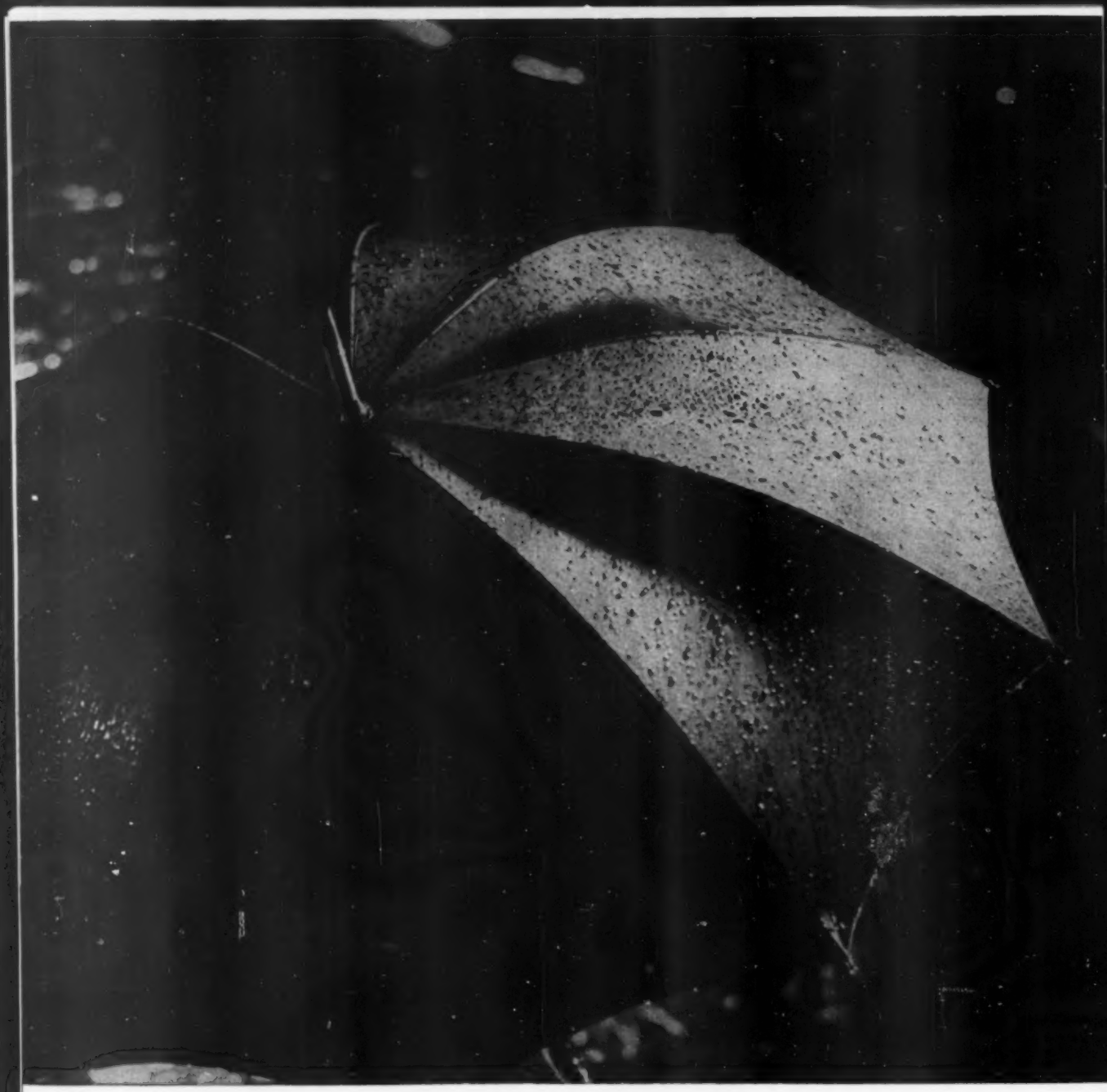
From its labs came new processes for catalytic polymerization, isomerization, and alkylation, all of which played important parts in the production of aviation gasolines during World War II. In fact, when the war forced pooling of all patents in the newer techniques of catalytic cracking, UOP became one of two companies authorized to license all the pooled patents, and it collected over 50% of pool royalties.

• **The Boom Falls**—Then, in 1944, everything fell apart.

Many of the original patents on which UOP's income was based were running out, or becoming obsolescent. Research was at a standstill. Most of UOP's staff was scattered around the country at operating plants squeezing out aviation gas. The Justice Dept. was threatening an antitrust suit for the cartel-type arrangement involved in Universal where the owning oil companies could decide which of their competitors should have access to key processes. The Treasury Dept. was slapping the company with several millions in deficiency judgments for unpaid taxes. A federal court ruled that some key patents were either invalid, or not infringed by similar processes, just about shattering Universal's licensing system.

Then, in June of that year, an appellate court found that the company had participated in the bribery of a federal judge sitting in a patent infringement

CHAIRMAN David W. Harris walked into a company that in 1945 was insolvent, turned it into a keystone of the oil industry.



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case in 1934. One month before that decision, Hiram J. Halle, who had been president of UOP since its start, died suddenly with no succession set up.

• **No Choice**—With that combination of factors, the owning oil companies decided to get out from under. Nothing much was left—except problems—to sell or liquidate, so they gave it away.

A first offer, direct to the American Chemical Society, was turned down. A second arrangement was made in September, 1944. The company would be turned over entirely to the Guaranty, with income from the trust to go to the Petroleum Research Fund. The Guaranty accepted the trust for two reasons: The donor companies were all good customers of the bank, and nobody realized just how bad a shape the company was in.

It took almost nine months for J. Luther Cleveland, then president and now chairman of the Guaranty, to find a man to run UOP—David William Harris, president of Arkansas Natural Gas Corp., and a veteran of 30 years in the oil business.

II. Multi-Horned Dilemma

This is the situation Harris walked into.

The company had almost no cash, its laboratory facilities were archaic. It had outstanding long-term income notes for $8.5-million at 7%, with $8.7-million in unpaid back interest, and no sinking fund. After the bribery decision, companies that had taken licenses as a result of the 1934 patent case stopped paying royalties and brought suits totaling $44-million for return of royalties already paid and damages. Almost $5-million more in other judgments were assessed against UOP, with no reserves to meet them.

Future revenue was questionable. When the big oil companies gave UOP away, they still reserved immunity from royalties from any patents developed by the company through 1948—for one company through 1956.

Even so, Universal never actually ran in the red. In 1946—its financial low point—its net from operation ran over $500,000. But this still didn't leave any money for reserves against the huge amount of probable obligation. In 1950, its net was up to $2.3-million, on a total revenue of $13.6-million. By 1956, it had scooted up to $6.7-million on $80-million of gross revenue. The figures will be higher for 1957.

• **Fancy Footwork**—The turnaround was a combination of luck and fast footwork. No single problem came to an acute head until Universal was able to breathe a little again. "If we hadn't been able to stall off settlement of some judgments," says Harris, "we'd have been finished long ago."

Starting in late 1945, Universal made several quick moves. A recapitalization of the debt structure was worked out; a new process was jammed through as a base of a new licensing backlog; and Harris persuaded the very companies suing Universal to help pay for whatever judgments might develop.

The income notes with the heavy arrearages of interest, had also been held by the owning oil companies, and turned over to the Guaranty with the common stock. The company and the bank agreed to convert the $17-million in obligations into $4-million of 20-year debentures, at 5%. So far, the Research Fund has received $3.7-million. But for about 10 years, the debenture interest was the only income from the trust—$150,000 a year to the Research Fund, $50,000 to the Guaranty as its trustee fee. All other earnings were plowed into contingency reserves against a possible $50-million in judgments. Actually, the suits cost the company only $5.5-million—the last of them was finally settled last year.

• **New Business**—Meanwhile, with the war over, the octane race in gasoline had heated up again. Small refiners had just about reached the limit they could obtain with familiar processes. New catalytic crackers developed during the war were expensive. Big companies might afford them, but small refiners were worried.

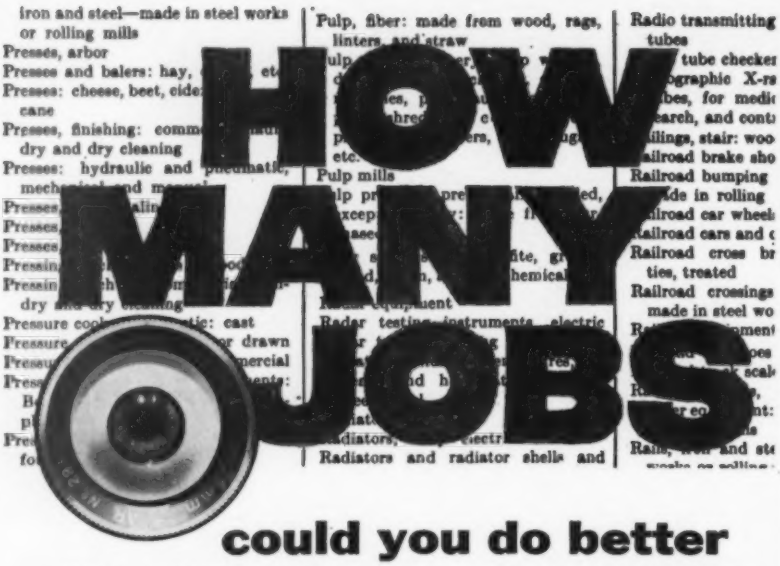
Universal, during the war years, had picked up considerable knowledge of cat cracking, and its engineers developed a small fluid cat cracker that independent refiners could afford. The first unit was sold in 1946, went on stream in mid-1947. By mid-1955, UOP had designed and licensed 50.

• **Service Package**—Even in the bad years, UOP still collected royalties averaging $4-million a year on patents and processes not affected by the court decisions. But this was hardly enough to insure its life.

Harris reasoned that over 31 years Universal had amassed a tremendous amount of technical knowledge that refiners could use on a service basis: plant design and engineering, solution of processing problems, maintenance and inspection service, evaluation of crudes, and product testing. Harris persuaded the small refiners, who were already suing UOP, to take the service package—in effect, giving the company enough income to continue to operate, with the profits going into contingency reserves to pay off the same customers when the suits were settled.

III. The Breakthrough

Universal's breakthrough really came in 1949 with Platforming—a trade name for one type of catalytic reforming, using platinum as the catalyst, which



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Universal's announcement of its process got a dubious reception. It was suggesting the most expensive catalyst in industry–the first lab product cost $50 a lb., although it had come down to $8 by the time it was announced–for use by small outfits in the biggest financial squeeze. The first commercial plant under the UOP license cost around $250,000, and used 4,000 lb., or $132,000 worth, of the catalyst. Universal financed and directed the construction of the first one itself, since a commercial unit cost little more than a pilot, and with the industry cocking a skeptical eye, a pilot wouldn't have been taken seriously. Even later plants were taken only under stiff guarantees.

• **Byproducts**–Platforming pushed Universal into two new businesses–construction and manufacturing.

Universal already had a group familiar with refinery construction, had for years acted as design and engineering consultants, but building in a new refining process is a tricky business. UOP was gambling heavily on the success of Platforming. If the new system had broken down, the guarantees could have broken Universal. So it set up its own construction subsidiary, Procon, Inc., to build them. Today, Procon will build Universal's processes, or anybody else's, on a competitive bid basis, does $30-million a year in new refinery and chemical plant construction.

Manufacturing came about for a different reason. In its earlier days, Universal had developed several products used by the industry, but had them manufactured by others. Shortly after the end of the war, its chief supplier announced that since UOP's patent had run out, it would no longer supply the product to Universal, but would sell it directly to the trade.

With its new platinum catalyst, Universal decided to go into production for itself. Now its manufacturing subsidiary turns out $28-million in platinum catalysts annually, plus a variety of other chemicals that go to the petroleum, rubber, and even food industries.

Within five years, UOP had licensed well over 80 companies to use its Platforming process–including some of its former owners (who, since the new process came out after 1948, are again paying royalties to UOP).

• **Coming Up**–New processes have continued coming out: Udex (jointly with Dow Chemical), a process to recover aromatics like benzene and toluene, key elements in many industrial and defense applications; Rexforming, a process to produce high-octane gasolines from low-quality feed stocks; Unifining (together with Union Oil) a process for eliminating impurities from

petroleum distillates; and a half-dozen others. UOP is back in the licensing business solidly—with $13-million a year in royalty income alone.

Universal won't take any contracts to do research for others. "What we develop," says Maynard P. Venema, president and heir-presumptive to Harris' top spot as chief executive officer, "we keep for ourself."

• **Research First**—Although the bulk of its gross revenue today comes from manufacturing and construction, rather than licensing, Universal still considers itself primarily a research and development company. Of its 1,880 employees, almost 500 are technical people. Every one of the company's top level executives, including financial and legal men, have either science or engineering degrees, many of them advanced. Research is so completely integrated with all other operations that the company has never been able to figure out what its "research budget" is.

• **Competition. . . But**—But UOP has lots of competition today, from Houdry Process Corp. and M. W. Kellogg Co., both of whom parallel Universal to a degree in the licensing of other refining processes, as well as from the big oil companies. In the construction and design field, it goes against Kellogg, Foster Wheeler Corp., and Lummus Co., among others.

Then why the concern of the small refiners?

UOP sits on a peculiar balance point in the industry. It not only licenses its own patents, but acts as licensing agent for several major companies, including Union Oil, Shell Oil, Atlantic Refining, and Dow Chemical, plus the pooled wartime patents. That, combined with its extensive service facilities, makes it a natural for the producer who cannot support facilities equivalent to the giants. Says one small refiner: "If it were ever sold outright to one of the big boys, what with competition getting tougher, we might find ourselves out in the cold."

• **Sales Tag**—How much UOP will sell for when it finally goes is anybody's guess. A conservative ten-times-earnings ratio would put its value somewhere around $65-million to $70-million. New owners would be buying comparatively little in the way of physical plant. Total physical assets—including modern headquarters and laboratories and two manufacturing plants—come to only $14.5-million. Universal's patent pool is carried on the books at $1, and its estimated value over the next decade is a company secret. Against that, the company now has a comfortable amount of cash, a debt total of only $4.5-million—including the unamortized portion of the debentures and mortgages on its facilities—and not a single lawsuit in sight. **END**

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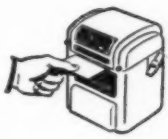

The business end of the fueloil industry is entrusted to one of the most accurate commercial measuring devices made . . . the tank truck meter. It measures every gallon delivered, then prints a fool-proof receipt which assures the customer that he actually got every drop he pays for . . . even if he wasn't home when the delivery was made. The printed tickets simplify book-keeping, and help drivers "check out" their figures day after day with no losses.

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In Management

• • •

Everyone Talks About Democracy In Management, But Few Practice It

"Democratic management"—using all levels of employees to set policies and make decisions—is given a lot of lip service by top management but is seldom tried and still more seldom works. So says Dr. Robert N. McMurry (picture), senior partner of McMurry, Hamstra & Co., Chicago-based personnel consultants, in the January-February Harvard Business Review.

Most top men don't want the system, McMurry insists, because they are "more likely to be hard-driving, egocentric entrepreneurs who have come up outside the business, in careers where they have had to keep the power in their own hands; or they may be veterans and victors in the give-and-take, no-quarter in-fighting for positions of power within the business."

And most subordinates are unsuited to it because:

• "Bureaucratic traditions" in most companies produce security-seeking middle management men, who make excellent subordinates but poor ballcarriers.

• Even so-called "minor" decisions can have a devastating effect on an entire business if made incorrectly.

• In the lower echelons of the management scale, many supervisors care too little about their job or company to be really constructive.

Instead of participative management, McMurry proposes what he calls "benevolent autocracy." Here the top man would stress the desirability of "humanistic" management but would remain undeniably the strong top man, while all jobs and relationships would be clearly defined and rigidly structured.

• • •

Trustee for Automatic Washer Co. Sues Ex-President for $9-Million

The Automatic Washer Co. of Newton, Iowa, is still trying to get itself straightened out after its troubles with Sydney L. Albert's Bellanca Corp. (BW—Sep.15 '56,p184). C. M. Kirtley, the AWC trustee in bankruptcy, has brought suit for $9-million-plus against John W. Chamberlin, president of the company in the 19 months between March, 1955, and the bankruptcy. The suit charges that Chamberlin's actions during that period lost the company the amount now asked in damages.

In December, 1955, Automatic Washer accepted a $1.2-million Bellanca note from Albert in return for 305,000 newly issued shares. The note and 687,500 shares of Automatic Washer were exchanged three months later with Bellanca for 96% of the N. O. Nelson Co., St. Louis plumbing equipment wholesaler. The Nelson stock was sold last May for $700,000.

During the 19 months covered by the suit, the outstanding stock of Automatic Washer increased eight-fold Between December, 1955, and March, 1956, the company issued stock to Richland Securities Corp., Washer-Dryer Corp., Pierce Governor Co., and Bellanca. In the Washer-Dryer deal, the suit charges, stock then worth at least $700,000 was exchanged for used equipment worth no more than $20,000.

• • •

Management at American Pulley Waters Down Van Norman Bid for Voice

Management at **American Pulley Co.** won a limited victory in the first proxy fight of 1958. **Van Norman Industries, Inc.,** which owns 20% of the maker of materials handling equipment (BW—Dec.28'57,p54) increased its board membership from one to three, but American Pulley management got the board increased from nine members to 10. The proposal that touched off the proxy battle—that APC acquire for stock the **Hubbard Spool Co.**—was approved by the board three days before the annual meeting, with Herbert I. Segal, Van Norman president, casting the only opposing vote.

On two other proxy battle fronts:

• The dissidents at **General Realty & Utilities Corp.,** of New York, decided not to try for board seats, but to pursue their aim—liquidation of assets—by soliciting proxies on such a proposal.

• At **Lakey Foundry Corp.,** of Muskegon, Mich., the litigation that forced three postponements of the 1957 annual meeting is to end with a compromise giving the dissidents a second seat on a board expanded to six.

• • •

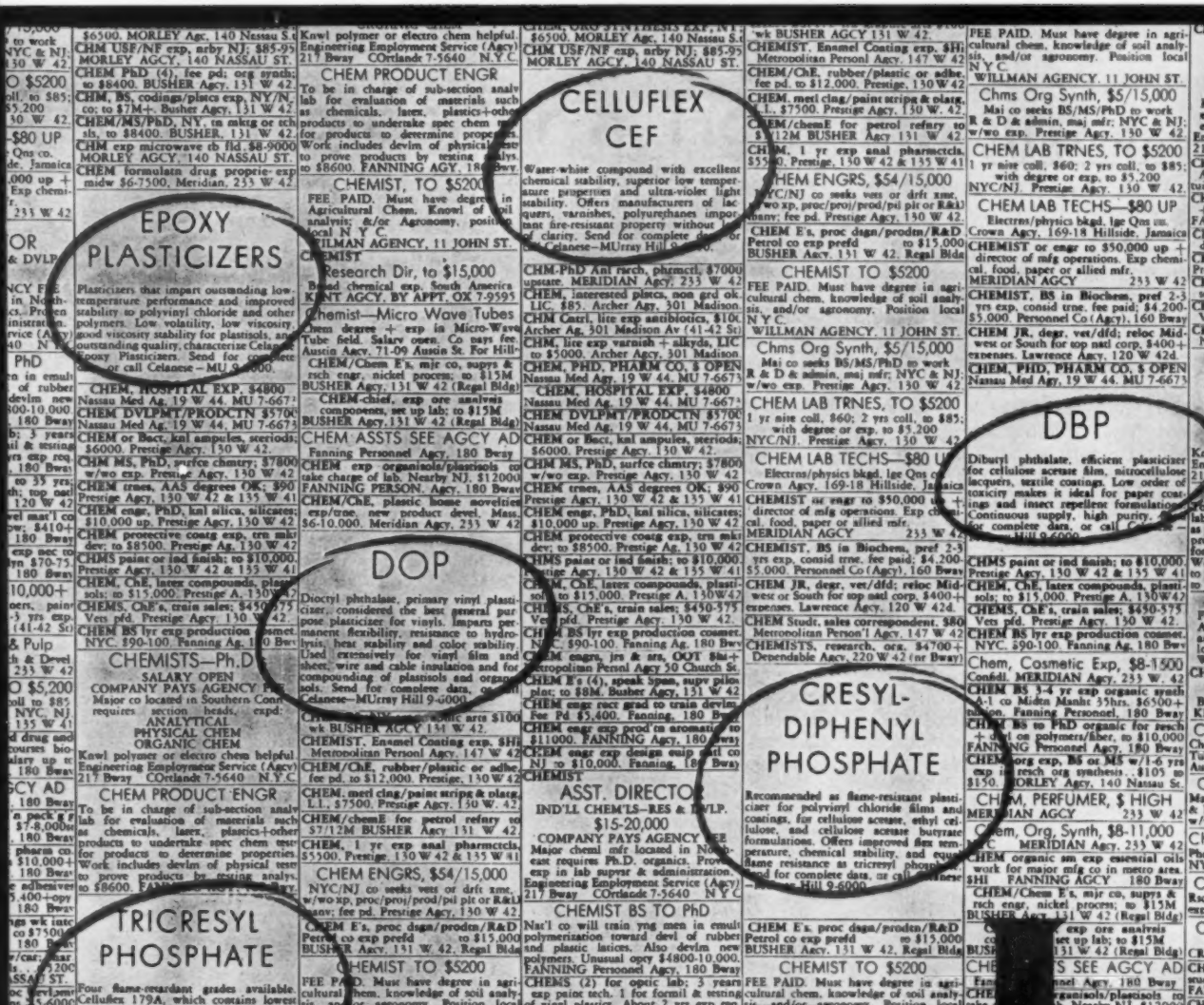
Management Briefs

Swan-Finch Oil Corp., the massive holding company with the confused books (BW—Nov.30'57,p85), has filed a voluntary petition for reorganization under the Bankruptcy Act.

Penn-Texas Corp. sold its third holding in a month in its drive for cash (BW—Dec.7'57,p82). The assets of Liberty Aircraft Products Corp. went to H & B American Machine Co. for more than $1-million in cash.

Nine of the 12 domestic fabricators of precious metals owned by Charles W. Engelhard (BW—Feb.2'57,p90) are being consolidated into a new company, Engelhard Industries, Inc. Biggest contributor to the complex's $200-million annual sales is Baker & Co., the world's largest platinum fabricator, with more than $50-million.

In one fell swoop, Vulcan Materials Co., producer of paving materials, took over—by merger or acquisition—nine other companies in the same business. The largest is Union Chemical & Materials Corp., which began life as Follansbee Steel. Total sales of the whole group are about $90-million.



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COMPANIES

Getty Bids for a Tight Empire

Through an exchange of stock, the richest American plans to draw closer Getty Oil's wells and Tidewater's refineries.

Jean Paul Getty, whose title of richest American rests on his holdings in a trio of oil companies, is planning a move that will give him tighter grasp over his oil empire, that promises to make him richer than ever. It also may be the first step in establishment of a close-knit combine to rank among the giants of the U.S. oil industry. Such a combination might eventually consist of Getty's three biggest holdings, Getty Oil Co., Tidewater Oil Co., and Skelly Oil Co.

Wall Street and the oil industry have been waiting years for a move like this. Financial analysts and industry leaders have long thought Getty would one day start to unify his oil interests.

But not until last week in an interview in London with a BUSINESS WEEK reporter, did Getty discuss the issue. What he had to say prompts belief among those analysts that Getty is taking the first step toward that unification.

He is planning an exchange of stock between two of his major oil interests to gain closer control of a third. Working within the complex context of these interests, he says he will offer to exchange the stock of Mission Development Co. for that of Getty Oil Co.

Getty interests own around 80% of Getty Oil (see diagram at right). Through this, Getty controls some 40% of Mission Development. In turn, Mission Development controls 47% of Tidewater Oil Co. And back at the beginning of the circle, Getty Oil owns another 14% of Tidewater.

• **Base for a Fortune**—Upon such complexities, fortunes are built and industrial empires established. Outsiders believe that Getty is about to start on some judicious simplifications. This is how they think he will add to his already enormous wealth ($700-million to $1-billion) and will eventually weld a tightly bound oil giant:

Getty Oil owns almost 2.1-million shares of Mission Development stock; exchanging its own stock for that held by the owners of all the other 2.9-million Mission Development shares would leave Getty Oil in complete control of Mission Development's 47% holding in Tidewater.

Issuing the Getty Oil stock that must be handed out in return will hardly affect Getty's personal control of Getty Oil Co. A hint that a stock exchange was in the offing came last year when Getty Oil split its stock two and a half for one—but authorized 5-million more shares than were needed for this split. These remain unissued, presumably in reserve for the next move.

Tidewater is an integrated oil company—a producer, tanker operator, refiner, and marketer—but it must still buy from outsiders 50% of its crude oil needs. It has one of the world's newest refineries, a $200-million plant in Delaware that was designed to produce petroleum products easily from the difficult-to-handle Persian Gulf crude oil.

Getty Oil is a producer with prime interest in the Persian Gulf. Production at its wells in the Neutral Zone, between Saudi Arabia and Kuwait, has been rising rapidly—from 11,000 bbl. a day in 1955 to 16,500 bbl. in 1956 and 60,000 bbl. a day last year. Naturally, Getty Oil is seeking refiners and marketers for this leaping production.

• **Further Steps**—Because these two companies dovetail so neatly, Wall Street and oil industry observers believe that Getty's exchange-of-stock plan is merely the first step toward unification of Getty Oil and Tidewater.

For the more distant future, they see further unification:

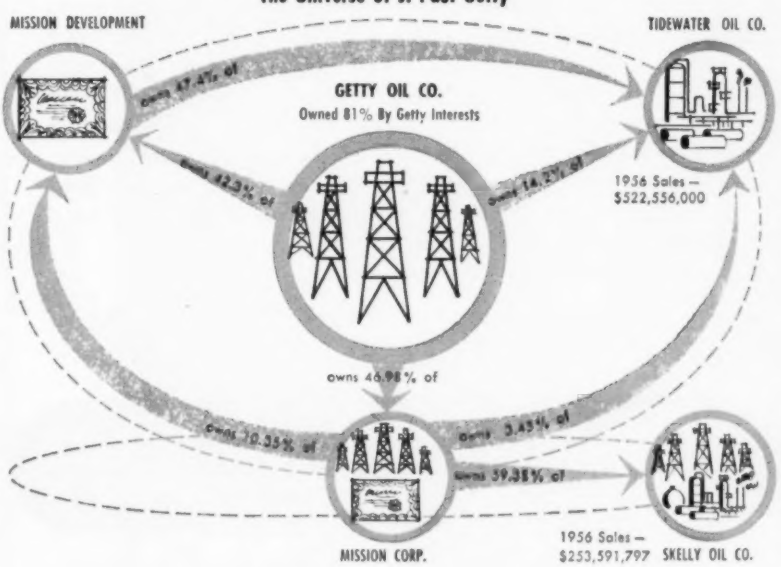
Another Getty interest is Mission Corp. Getty Oil holds a 47% control of this holding company. Mission Corp. in turn holds 59% control of Skelly Oil Co. And Skelly Oil is another integrated producer, refiner, and marketer. In fact, it produces about 50% more crude oil from its wells in the Southwest than its refineries in Texas, Kansas, and Colorado can handle.

This outfit, too, say leaders in the oil industry, would fit naturally into a combined Getty empire. Getty himself sidesteps the question; he says, "Right now I can't foresee the inclusion of Skelly Oil in a Getty-Tidewater combination."

• **New Giant?**—But if Getty were eventually to combine the trio of oil companies, Getty-Tidewater-Skelly, he would have at his command an oil complex with assets of more than $1-billion, which would rank just below the top 10 U.S. oil companies, be somewhat smaller than Cities Service. It's more likely that such a combination could be worth more than the simple addition of its separate assets indicates. Combining Getty Oil's cheap Persian Gulf production with Tidewater's and Skelly's U.S. refineries and chains of gas stations would produce a balanced organization; the whole could probably be worth more than the sum of the parts.

It may be years before any such combination is wrought. But the feeling is strong in the oil industry that before he dies Getty intends to merge his oil

The Universe of J. Paul Getty



JEAN PAUL GETTY, 65 years old and the richest American, makes plans for his $1-billion-plus oil empire from a suite with a balcony atop London's Ritz Hotel.

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". . . it has taken almost 30 years of gambling to collect all the pieces . . ."

GETTY starts on p. 58

companies' operations so that he can pass to his heirs a firmly welded, closely controlled empire.

I. Gathering the Pieces

It has taken Getty almost 30 years of unremitting gambling for high stakes to collect all the separate pieces of his oil empire. His training in the hectic life of an independent oilman began almost a decade before that.

His father, George F. Getty, was a prosperous Western lawyer and oilman who sent his son first to the University of California, then to Oxford, and next staked him when he started trading oil leases in the Southwest. Once he saw that his son could handle lease-trading at a profit, George Getty brought him into the family business—running several small wildcat operations in Oklahoma and California.

In 1930, George Getty died. He had learned to approve his son's business techniques, but he was incensed by his son's first divorce a short time earlier. As a result, he left 90% of his estate to his widow, excluding Jean Paul Getty from direct control of his companies. What followed were years of struggle between the son, who wanted to expand his holdings as fast as possible, and the mother, who during the Depression wanted to hold what she already had. Eventually, the son won.

• **Pattern of Empire**—Getty bought Pacific Western Oil Co., whose assets lay mostly in large oil reserves. With that, plus the string of smaller companies set up by his father, he had oil producers who were in need of a refiner. He made Tidewater his target. Even then, this company had to buy half its crude supplies from outsiders and its stock was undervalued.

Getty bought a quarter-million shares of Tidewater plus a slice of another company that had large holdings in Tidewater. He was elected to the board, prepared to expand his control. And then he discovered that Jersey Standard was in control of Tidewater, with a 1.1-million share holding.

• **Fight With a Giant**—Unfazed, he set out to beat the giant. A power battle ensued, and one of its early results was formation by Jersey Standard of Mission Corp., a company set up to hold Jersey Standard's investment in Tidewater and its holding of more than 500,000 shares of Skelly Oil Co. Jersey Standard distributed the Mission Corp. shares to its own stockholders; they apparently

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BENDIX Radio Division needed a smaller pliers for work on small electronic components in close quarters.

Snap-on sales engineer, Carl P. Flanagan, checked assembly line operations, then called in a *Snap-on* design engineer. This tool expert carefully watched the assembly of electronic parts, noting particularly the movements made with the pliers. He then designed a spring-loaded combination needle-nose plier and cutter. This tool in many instances replaced a needle-nosed plier and a diagonal cutter. The new pliers:

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2. **Reduced tool cost.**
3. **Have improved quality of production.**

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" . . . just how much wealth lies beneath the surface at Wafra is known to only a few insiders . . ."

GETTY starts on p. 58

didn't want them for they sold in large numbers—and waiting to buy was Getty.

This gave him his hold over Skelly Oil Co.—but it didn't win him control of Tidewater. For while Getty was pumping his money into Mission Corp., Tidewater was issuing new stock. So, by the time Getty held those 1.1-million shares of Tidewater, they no longer represented control. By 1937, he controlled Mission Corp.'s holdings. But it wasn't until 1951 that he gained a 50.1% holding in Tidewater.

• **Pundits' Mistake**—All this made Getty a rich and powerful independent oilman by the time World War II ended. But when he started his big move into international oil in 1949, the pundits shook their heads gravely. "No independent, not even Getty," they said, "can move into the international field and hope to keep his shirt in competition with the giants."

Getty may have paid them heed, may have worried, but in open financial operations he showed little anxiety.

• **Arbian Venture**—He bought a concession in the Neutral Zone on the Persian Gulf coast between Saudi Arabia and Kuwait. He paid King Saud $9.5-million, agreed to pay a royalty of 55¢ a barrel, and guaranteed Saud's treasury a minimum of $1-million a year whether he found oil or not.

In the first four years, Getty Oil put a total of $30-million into the Wafra Field, finally brought it into commercial production in 1955. Today, the field has 59 producing wells, which bring up 60,000 bbl. a day. When production holds steadily above 75,000 bbl. a day, Getty's agreement with Saud requires him to build a refinery at Wafra and lay out the beginnings of a permanent town there.

Just how much wealth in oil lies beneath the surface at Wafra is known only to a few insiders. Early last year, Getty Oil geologists estimated their company's share of Neutral Zone reserves at 5-billion bbl. A little later, Getty's chief lawyer, David Hecht, of New York, said Getty's share of the reserves possibly ran to 30-billion bbl., half of which were recoverable. Getty himself says: "Our reserves are in the billions of barrels and our development people are adding to the estimate regularly."

• **On the Scene**—Getty keeps close watch on the development of his huge Middle Eastern holdings. At least once a year, usually in the winter, he sets

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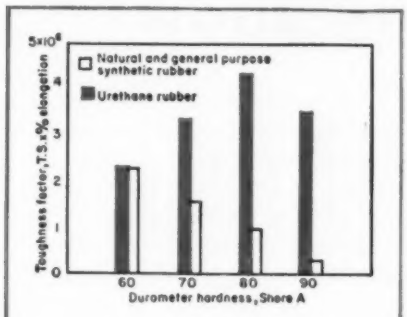

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. . . stays high as hardness goes up for cast urethane, compared here with other rubbers.

Mobay supplies basic chemicals and technology required for the manufacture of urethane rubber—latest addition to the growing list of urethane products for industry.

Urethane rubber is a new, chemically-engineered casting material developed for use in industrial parts where high load-bearing and long-wearing properties are critical requirements. It needs no waxes, clays, fibers or fillers such as are used in other rubbers to add functional properties lacking in the basic material. In urethane rubber, the molecular composition of the basic compound itself is modified to "build in" the range and combination of desired properties. You can specify—and get—the exact durometer, degree of elasticity, tensile strength, abrasion resistance and electrical properties you need.

What does this mean to you? If you are responsible for the selection of materials for your company's products, it means urethane rubber has opened up a broad new area on your materials selector charts. If you are a manufacturer, or responsible for production or maintenance costs on heavy-duty equipment, urethane rubber means economy because of the ease with which it may be cast into parts having difficult undercuts, slots, inserts, threads or other complex design features.

Get the full story on how urethane rubber can fit into your product's future. Write today, briefly outlining your area of interest. Technical data and sources of fabricating assistance will be forwarded promptly.

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Dept. BW-16 St. Louis 4, Mo.

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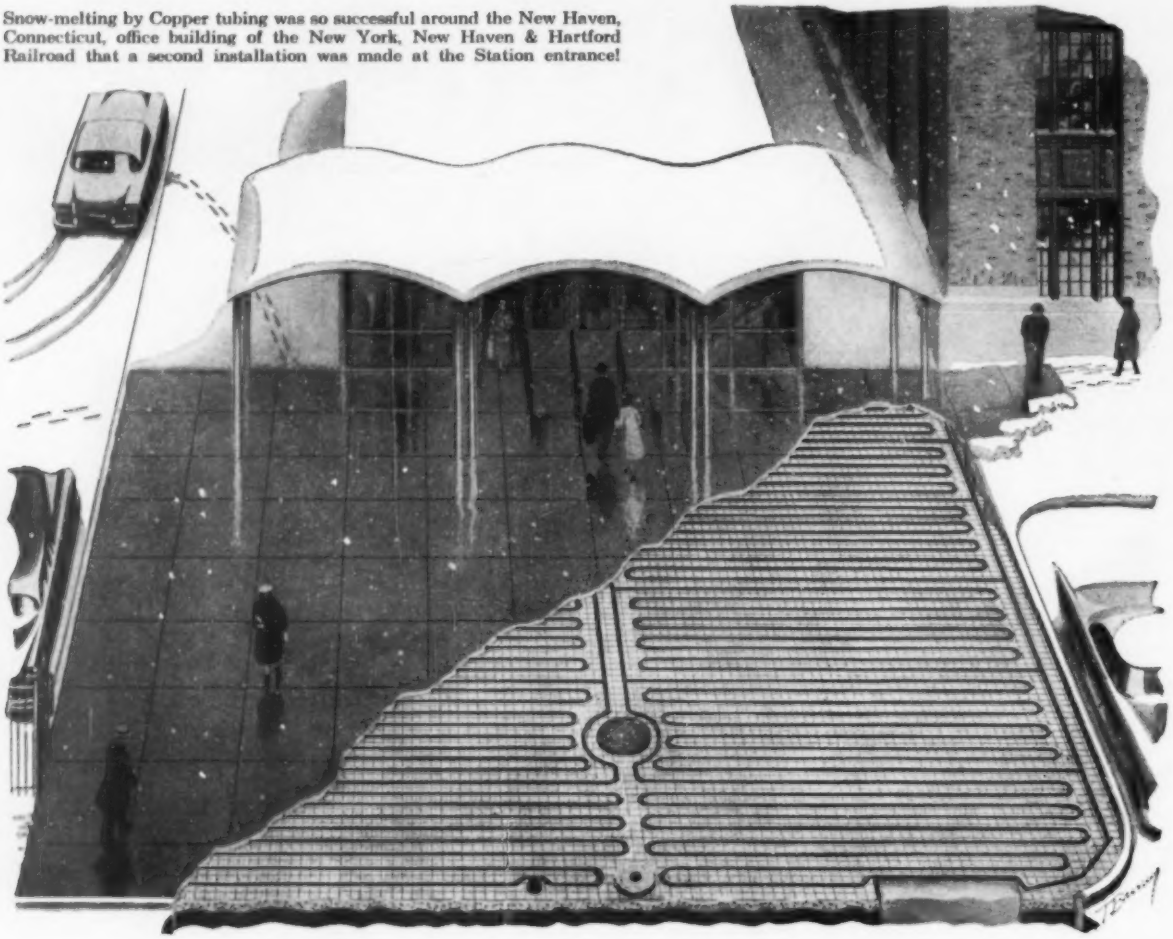
First in Urethane Chemistry

Snow-melting by Copper tubing was so successful around the New Haven, Connecticut, office building of the New York, New Haven & Hartford Railroad that a second installation was made at the Station entrance!



Add COPPER
...and stop shoveling snow!

In New Haven at the railroad station, snow is removed by melting. Hot water, circulating through Copper tubes embedded in the pedestrian pavement, keeps the whole area clear!

Installing a snow-melting system . . . in front of a store or bank or office building or along residential sidewalks and driveways . . . *is easiest with Copper.* For Copper tube comes in 60 and 100 foot lengths, minimizing the number of joints needed. These joints are quickly made too . . . by soldering or brazing. Also, the flexibility of Copper tube makes most of the bending something a mechanic can do with his two hands and a knee!

And the life of the completed, continuous heating coil? Just about *unlimited.* For Copper means virtual absence of corrosion and consequently a smooth, free flow of the heating medium at all times. No clogging with rust or other matter.

For other applications, Copper offers other superior properties, too. It's the best conductor of electricity commercially available. It is easy to machine, draw, form, stamp, polish, plate. And you can count on an ample supply of Copper to meet all your future needs.

COPPER · BRASS · BRONZE
in over 40 Standard Alloys!

For other examples of Copper tube's lower cost of installation, write the Copper & Brass Research Association, 420 Lexington Avenue, New York 17, N.Y.

INGREDIENTS in Getty's plan to tighten control over his oil holdings include supertankers to carry oil from his Arabian wells to . . .

(Story starts on page 58)

out from the relatively modest hotel suites he maintains in London and Paris to inspect the Wafra work. He makes the long journey by car because he loathes flying.

In the last two years he has witnessed the rapid expansion of oil production at Wafra, has seen the construction of oil loading docks, has welcomed the arrival of the first units of what's to be a fleet of 20 Tidewater tankers, each of 40,000 deadweight tons or larger. Much of Getty Oil's production moves by Tidewater's tanks. But linking Wafra's product even more closely with Tidewater's tankers, refineries, and distribution system apparently is Getty's aim in the stock deal he plans.

II. The Newest Move

Until Getty Oil started growing rich on Persian Gulf oil, the financial analysts thought that when it came time for Getty to unify his oil empire his first move would be to weld Skelly Oil Co. with Tidewater. For years, there were strong rumors that all that prevented him from doing so was the outspoken opposition of William Skelly, founder and president of Skelly Oil Co. Since Getty used Skelly Oil dividends to do much of his buying of Tidewater stock between 1937 and 1951, he was, the rumors went, dependent on Skelly's goodwill and didn't want to push his merger idea too hard. This theory was so firmly held that when Skelly died last April, the share prices of all the companies soared in expectation of a merger.

• **Denials**—But now, Getty says the rumors were false, the theory wasn't valid, and the sudden leap in share prices last year was based on wrong assumptions. "I don't understand Wall Street," he says with one of his rare half-smiles, "and Wall Street doesn't understand me.

. . . Tidewater's newest refinery in Delaware, designed to handle Persian Gulf oil.

"There was never a question of conflict between Mr. Skelly and me. . . . I was always in a position to remove Mr. Skelly, but you don't think about removing a man as competent as Mr. Skelly was."

Why then has he not attempted to simplify his complex oil empire until now? "First," says Getty, "it wasn't in the best interests of our companies. Second, only in the last two or three months has our development in the Middle East reached a point where we can assess the value of our assets. We have, at last, some idea of our Middle East reserves."

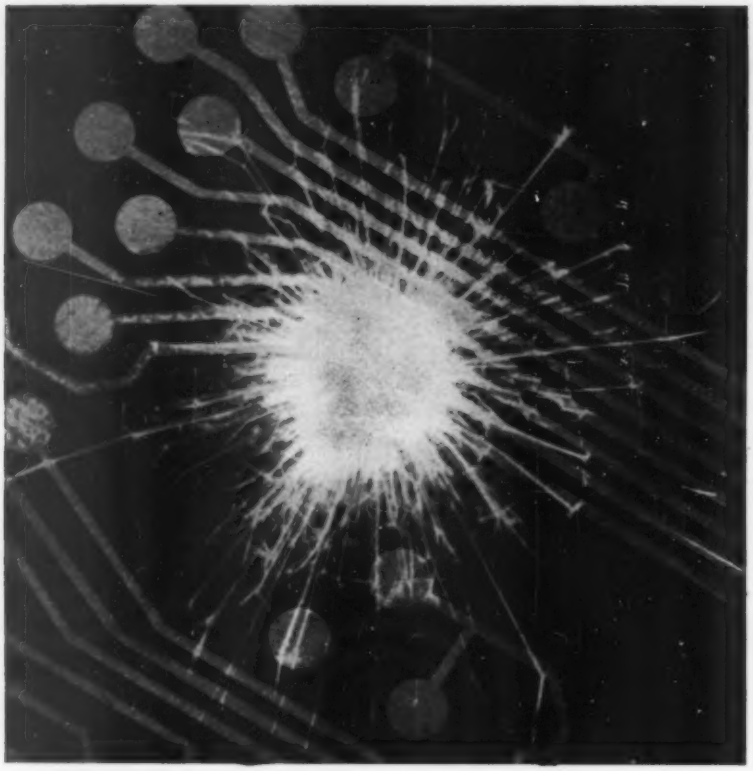
• **Stockholder Problem**—The exchange of stock deal that Getty is planning will, he says firmly, lead to "closer, more unified management of Tidewater and Getty Oil." The chief problem of the deal, he recognizes, will be keeping the minority stockholders happy.

"That's one reason why we think an exchange of shares is the best way to bring this about. An exchange is voluntary; those who want in on it may get in, those who don't are privileged to keep their position as it is.

"An out-and-out merger wouldn't give them this choice. Furthermore, a merger wouldn't be too practical since the assets of Tidewater and Getty Oil are so dissimilar. And only by offering the exchange to Mission Development shareholders could we make it on a nontaxable basis."

There were signs of opposition among some Getty Oil Co. minority stockholders toward an exchange of stock when rumors of such a deal came up in the past. They're worried because Middle Eastern tensions still have a bearish effect on Persian Gulf oil stocks. But Getty pooh-poohs much of this.

In this, as in so much else, he



Uniformity of Taylor Rolled Copper-Clad Laminates helps prevent shorts in printed electronic circuits

Taylor Rolled Copper-Clad Laminates help prevent both shorts and open circuits: shorts because the copper is free of lead inclusions; open circuits because the metal is free of pits and pinholes. They have such high uniformity that even lines only 0.002 in. wide, and only 0.004 in. apart, can be produced. These features also help prevent resistance buildup and other faults that cause failures in radios, television sets, and other electronic devices in home and industry.

Production control at Taylor Fibre Co. is responsible for this highly uniform printed circuit material. Taylor has devised a unique method of bonding high-purity rolled copper to the base laminate—and keeping it securely bonded even under severe conditions of temperature, humidity and mechanical stresses. From this results the production of printed circuits of consistently high quality.

This is only one of the many Taylor Fibre Co. products that are meeting industry's demands for improved materials with superior performance characteristics. If you require laminated plastics—in basic form or fabricated parts—contact the nearest Taylor sales office. Save time and money with the right source of supply.

Actual size of printed circuit on Taylor Copper-Clad Laminate. The lines are only 0.002 in. wide and only 0.004 in. apart.

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TAYLOR FIBRE CO. Plants in Norristown, Pa., and La Verne, Calif.

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First and largest volume producer of rolled copper-clad laminates for printed circuits

GEORGE GETTY II, Tidewater vice-president, may be one heir to his father's empire.

doesn't follow the crowd. In the face of gloomy talk about a continuing surplus of tanker tonnage, Tidewater keeps to its program of building 17 supertankers in the next six years. Says Getty: "The experts [on the tanker market] will soon be contradicting themselves. . . . They always do."

III. Man Who Has Everything

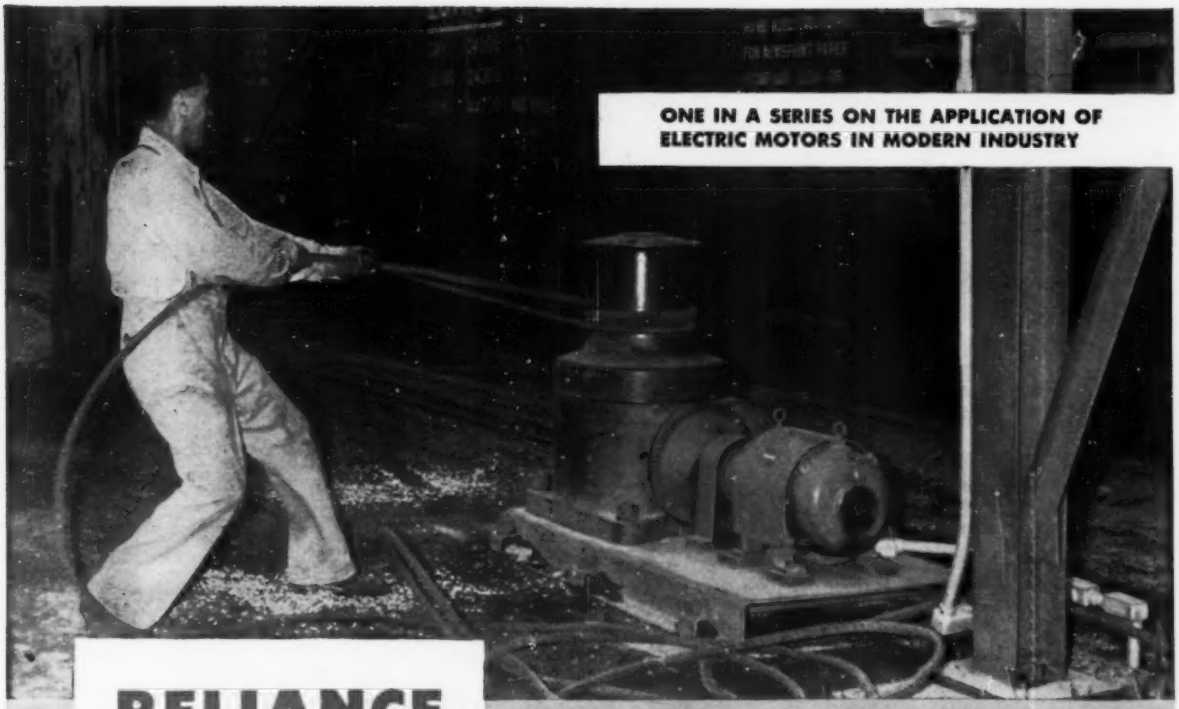
Even among the present multimillionaires of America, Getty is a maverick. He thrives on (though his mournful countenance might indicate he doesn't enjoy) the pressures of his complex financial dealings. His passion is to build up and preserve his oil empire, whereas most others of even remotely comparable wealth have inherited solidly entrenched industrial empires.

He claims: "I have never particularly wanted to make money, but as my business developed over the years, money came with it."

• **All for Business**—The development of that business has been of overriding importance for Getty. His private life has been anything but stable. He has divorced or been divorced by four wives and is now legally separated from his fifth.

Of Getty's five sons, two are directors of companies within his empire. George F. Getty II is also a vice-president of Tidewater. Getty himself appears on the officers and directors lists of only three of his five companies. He's president of Getty Oil, Mission Development, and Mission Corp., but he holds no title in either Skelly Oil Co. or in Tidewater.

For the past six years, Getty has been an expatriate, living in London and Paris and commuting between those cities and his Middle Eastern oil lands. He lives without yachts or butlers.



ONE IN A SERIES ON THE APPLICATION OF ELECTRIC MOTORS IN MODERN INDUSTRY

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cut maintenance time in food processing plant!

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This modern food processing plant prefers and specifies Reliance Motors for the extra features offered only by Reliance—features that add up to 'Total-Protection' . . . protection against weather . . . protection against excessive maintenance . . . protection against costly breakdowns.

For further details write for bulletin B-2501.

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A Reliance 1 hp. Brakemotor easily hoists a truck weighing several tons for convenient unloading into the sheller bin. The safety features of this motor will keep the truck up there . . . even during a power failure.

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GETTY'S side interest is art, on which he has written book called "Collectors Choice."

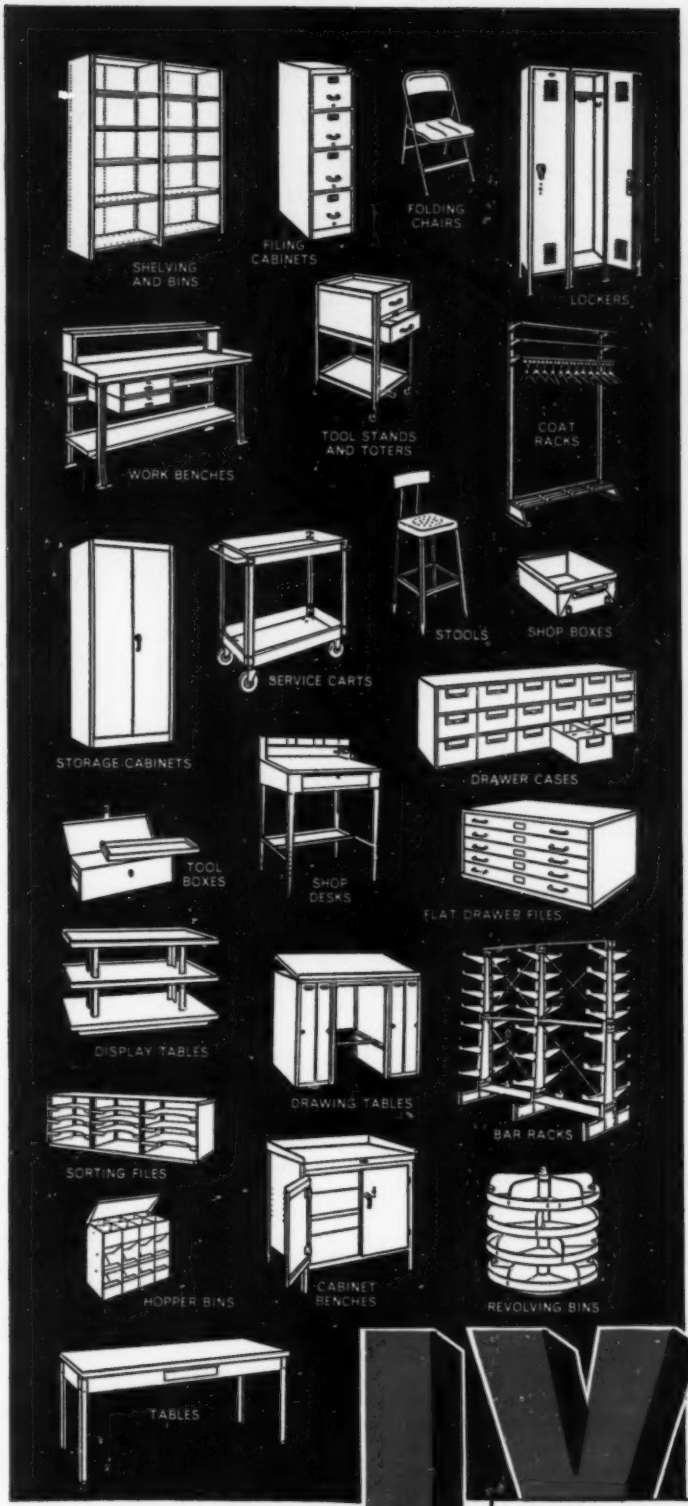
Business conventions would be anathema to him, for he likes to cite some advice his father once gave him, which was ". . . most of the men you'll meet will be financial lightweights."

• **Art and Simplicity**—Despite his absence from the U.S., Getty maintains a sumptuous home in Los Angeles, a 40-acre estate within the Los Angeles city limits. Behind the estate's 10-ft. high stone walls is his miniature zoo of lions, bears, wolves, bison, and gazelle. Adjoining the house is his museum, which houses his art collection—Titians, Tintorettos, Gainsboroughs, ancient Greek and Roman sculpture, early French tapestries and 18th Century French furniture. Most of these Getty bought in much the same way as he gathered his industrial holdings: by bidding when the market was weakest. He gathered the bulk of his art collection in the Depression.

Such possessions haven't affected his otherwise simple life. Clothes, food, and high living barely interest him. On at least one occasion, he sat down in the dining room of New York's Pierre Hotel—which he owns—and ordered a dinner of corned beef hash.

Outside oil, he does have other business interests. Besides the Pierre in New York, he owns one of the newest hotels in Acapulco. He has cattle and sheep ranches and other real estate, a finance company and an insurance company, a string of cafeterias and Spartan Aircraft Co., which no longer makes airplane parts but turns out house trailers.

But other than oil, "they're all of minor importance," says Getty with a wave of his hand. **END**



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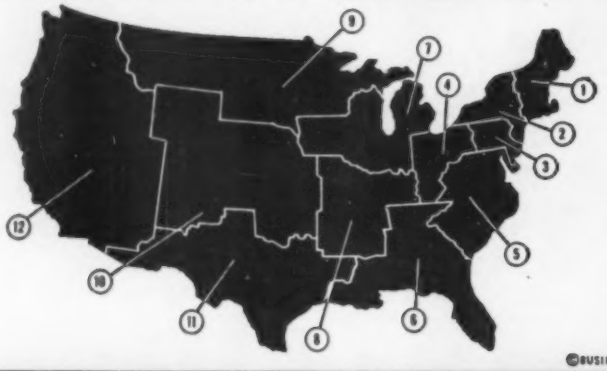
The Income Pattern:
Business Week's Regional Income Indexes

U. S. Incomes: Up 3.6% From Last Year



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Federal Reserve District	% Change vs. year ago	The Indexes Oct. 1957	Sept. 1957	Oct. 1956
1. Boston	+ 2.2%	292.6	285.5	286.4
2. New York	+ 5.2%	318.7	316.3	303.0
3. Philadelphia	+ 3.5%	307.8	304.0	297.4
4. Cleveland	+ 1.1%	353.8	355.3	349.9
5. Richmond	+ 4.5%	379.0	383.1	362.6
6. Atlanta	+ 4.1%	457.6	471.8	439.6
7. Chicago	+ 4.1%	363.3	361.3	349.0
8. St. Louis	+ 1.2%	330.4	337.9	326.6
9. Minneapolis	+ 7.9%	369.5	372.0	342.6
10. Kansas City	+ 6.4%	422.9	424.7	397.6
11. Dallas	+ 5.9%	503.8	516.9	475.8
12. San Francisco	+ 0.4%	404.2	403.7	402.4
Nation	+ 3.6%	363.5	364.2	350.9

1941 = 100; adjusted for seasonal, October figures preliminary; September revised.

The Gain Shrinks Still More

October incomes made the smallest year-to-year gain in 31 months. In fact, they shaded down from September.

U. S. incomes last October were 3.6% above their year-ago level, according to BUSINESS WEEK's Composite of Regional Income Indexes. That was the smallest year-to-year gain in 31 months. For the regions, gains ranged from 0.4% in San Francisco to 7.9% in Minneapolis.

The San Francisco region's slim gain can be attributed in part to curtailed activity in aircraft and associated industries in California, resulting in a sharp drop in factory employment there. It was reported to be the greatest decline for any month since November, 1953, and the greatest month-to-month sag for any October since 1945.

Next smallest year-to-year gain was in the Cleveland district, where the mediocre record can be attributed largely to the tapering off of steel production.

From September to October, the nation's incomes declined 0.2%—the second month that incomes have been falling. The nation's October incomes were 0.3% below the peak reached in August. Except for the three East Coast districts of Boston, New York, and Philadelphia, all regions had October incomes below their all-time highs. The three regions where incomes still stand at their peaks happen to be those where incomes rose most slowly over the 16 years since the beginning of World War II. END

Oyster Stew

That's what Maryland and Virginia are in, and it will take Supreme Court trial to bring peace.

When state sues state, usually over a boundary dispute, the Constitution provides that the Supreme Court has original jurisdiction—one of the rare times when cases don't have to come up to the court through appeals. Last month, the Supreme Court accepted jurisdiction in the latest case, brought by Virginia against Maryland.

The interstate row involves authority over oystering in the Potomac River. It has been going on for years, punctuated by gunfire in running battles between wardens and poachers. By good luck, no one has been killed in these night battles, and no boats sunk in a year.

• **Ancient Agreement**—Virginia has brought the complaint to the Supreme Court on two grounds:

• That Maryland cannot by its own action cancel the 1785 compact between the two states that covered rights to the oyster fisheries.

• Hence, that Maryland cannot enforce its 1957 laws on oystering without Virginia's consent.

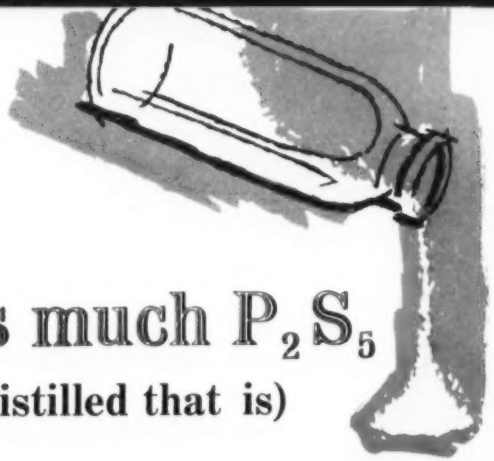
The bistate compact of 1785 antedates the Constitution—therefore, the Supreme Court itself—by four years. Yet it appears to be the key piece in the legal puzzle. Here's why:

The grant by King Charles I that fixed the boundaries of Maryland in 1632 gave the colony, later to be a state, all of the Potomac to the low-water mark on the Virginia side. The 1785 compact, however, gave Virginians equal rights in the Potomac, in return for free navigation through the Virginia Capes for Marylanders—a right that the Constitution would have given Maryland anyway, four years later.

• **The Falling-Out**—As time went on, both states got worried about the depletion of the oyster beds in the Potomac. In 1880, the harvest was 15-million bu.; in 1932, only 1.75-million bu. In that year, the two states joined in laws making it illegal to dredge for oysters in the Potomac. Only the slower, smaller-scale method of tonging was allowed.

The laws weren't consistently and equally enforced, however. In fact, in 1948, Virginia passed a repealer of the ban on dredging, but effective repeal was invalidated by Maryland's refusal to concur. Maryland, in fact, became even tougher in enforcement.

Last year, Maryland's General Assembly declared the 1785 compact void and, in effect, reclaimed title to the



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Add about one and one-quarter percent of Victor Cream (Donut grade, sodium acid pyrophosphate) to the proper amount of doughnut mix, and you get doughnuts that can cause a kitchen caper like this.

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For example, Victor produces four grades of SAAP: Perfection, Donut, Victor Cream, and B.P. Pyro. There's one for the specific type of baking performance required for a doughnut mix, a cake mix, a baking cream, or baking powder.

Yours may not be a leavening problem, but if you need an *inside job,* performed in confidence, a Victor phosphate, formate, or oxalate may be the solution. Tell us which Victor chemical you are interested in, and there will be a sample in your lab or a reply from our technical service department before you can say, "It *pays* to see Victor". Write on your company letterhead to: Victor Chemical Works, Box 603, Chicago 90.

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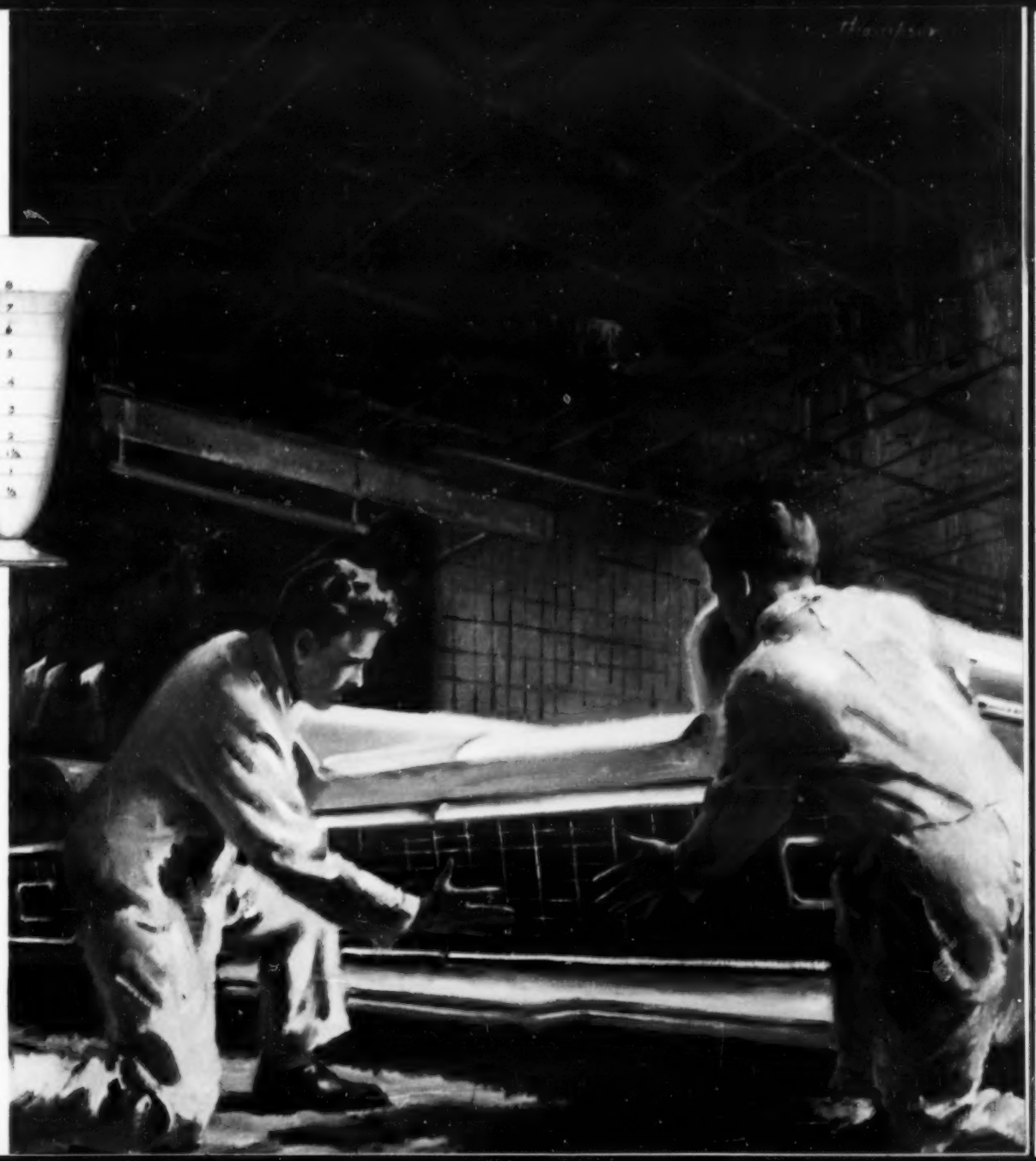

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We will be glad to ship you a carload of V-90, or one of the other Victor chemicals, but business usually starts in a small way, with a sample. So, when you're ready to evaluate or examine Victor chemicals, tell us which one to send, and you'll have a sample on your desk before you can say—it *pays* to see Victor. Write to: Victor Chemical Works, Box 603, Chicago 90.

". . . for the oystermen, it's chiefly a matter of how much they can earn . . ."

OYSTER starts on p. 70

whole breadth of the Potomac. The new law requires Virginians to take out Maryland licenses, at $3.50 a year, to fish for oysters in the Potomac; violaters are to be tried in Maryland courts and, if they are convicted, their boats and other equipment are to be confiscated.

• **Grassroots Defiance**—Both states are bucking local opinion in the oystering towns of the lower Potomac. It's partly a clinging to traditional fishing rights, but even more a matter of economics. By tonging, a man can make $20 to $40 a day during the oyster season; by dredging, a crew of five can split $500 a day.

Typically, a dredging crew will move into position at dusk, then work after dark. If they are spotted by a patrol boat, they dump their gear and their oysters overboard and race home. The patrol boat radios to police on shore, who meet the boat and arrest the men. However, the culprits are tried before sympathetic juries of neighbors in their home states, and there is little evidence against them except the wardens' word. Convictions are rare. Neither state has had much success with extraditing defendants to face trial on the other side of the river. Maryland blames Virginia for not cooperating in enforcement of extradition.

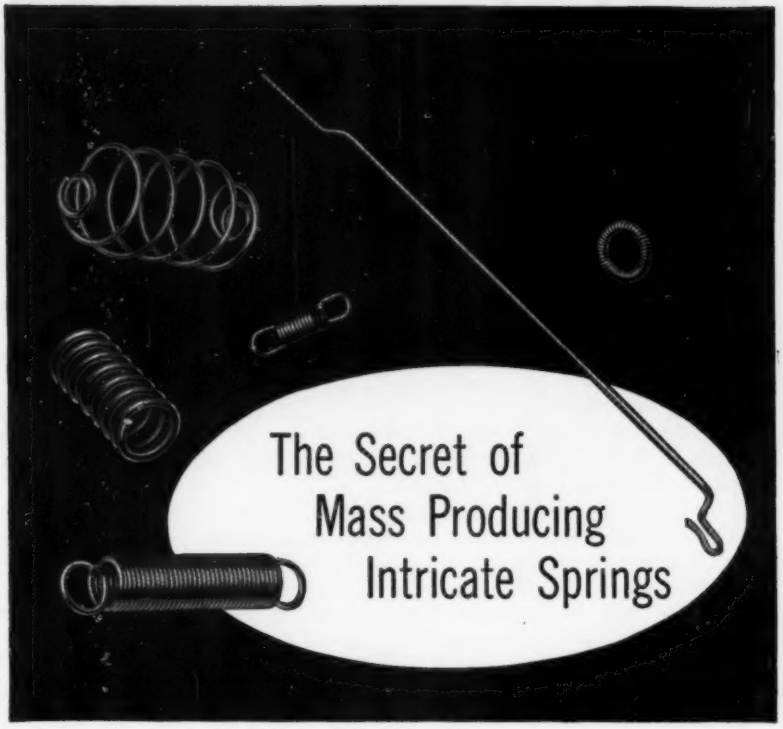
Both the oystermen and the patrols have been equipping themselves with faster boats, and Maryland recently acquired airplanes that could spot the illegal fishermen as they moved into position at dusk.

• **Next Step**—In September, just before the tonging season, Virginia notified Maryland that it was taking the dispute to the Supreme Court. Maryland said that the 1785 compact had not been legally recognized since 1936. Virginia countered that this makes no difference.

Maryland has until Feb. 17 to file its legal reply. Then the Supreme Court will appoint a special master to hear witnesses and collect evidence for action by the court.

Meanwhile, the river is quiet, and this season's catch is expected to equal last year's 3-million bu. At $2 to $4 a bushel, this amounts to a value of more than $6-million. Conservationists say good harvesting practices could boost the crop to 40-million bu., with a value of $80-million or more.

Maryland is still enforcing its own conservation laws, but so far it hasn't provoked any trial of strength by arresting any Virginians. **END**



Keystone MB Spring Wire makes difficult jobs easy!

There's *no secret* to mass producing complicated springs at Mid-Continent Spring Company, St. Louis, Mo. Experience – ingenuity – specially designed machines – and Keystone MB Hard Drawn Wire – combine to produce hitherto impossible or impractical springs.

An important part of the secret to successful spring manufacture is the selection of a quality wire – and here's how Mid-Continent feels about Keystone Wire. "We like Keystone Wire for its uniformity, true roundness and absolute tensile. For instance, on a recent run of 125,000 lbs., less than 1/10 of 1% did not meet our critical specifications."

The excellent performance of Keystone MB Spring Wire is due to its consistent uniformity of composition, temper and diameter. For difficult spring shapes – as well as for the easy jobs – Keystone Wire can assure you steady production and fewer rejects. Your Keystone Wire Specialist, backed by a skilled metallurgical staff, will gladly help you solve your wire problems. Call us . . . today!

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Crown Zellerbach to Fight FTC Order That It Must Get Rid of St. Helens

The toughest decision yet under the tightened 1950 anti-merger law came last week with the Federal Trade Commission's order to Crown Zellerbach Corp. to divest itself of St. Helens Pulp & Paper Co., a major company that it acquired in a 1953 stock swap. Four commissioners (one abstained) upheld the findings of a hearing examiner last year (BW—Mar.9'57,p27).

The decision allows Crown Zellerbach 60 days to file a plan to comply with the order. **The company will appeal to the U. S. Court of Appeals.**

The nub of the tougher Section 7 of the Clayton Act is that no corporation shall acquire the whole or any part of another corporation "where in any line of commerce in any section of the country, the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly."

The company argued that St. Helens' coarse paper line is too narrow to qualify as "any line of commerce." FTC disagreed.

The company also argued that the market area to consider should be the entire area west of the Mississippi. FTC disagreed. **It brought its charges on the basis that competition would be lessened in 11 western states.**

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Retailers Scan 1958 Prospects Wanly, Many Plan to Reduce Inventories

The nation's department, specialty, and chain store retailers are approaching the first half of this year with a cautious outlook, the National Retail Dry Goods Assn. reports. According to an NRDGA survey of more than 2,000 stores, this caution is taking the form of a refusal to increase inventories, along with conservative predictions about sales and profits during the coming half. Many merchants ended the Christmas season with gloomy forecasts for the new year (BW—Jan.4'58, p28).

NRDGA executive vice-president J. Gordon Dakins revealed that for many stores last year was disappointing and **"their plans for the first half of this year are based on the assumption that general conditions will show little improvements."**

Here's how merchants responded to questions about the first half as compared with the same period last year:

Volume: 31% expect an increase, 29% expect decreases, and 40% expect about the same.

Profits: 22% expect profits to rise, 28% expect them to drop, and 50% expect them to remain the same.

Inventories: 43% expect to reduce inventories of soft goods, and 51% will reduce hard goods, with 3% increasing inventories in both categories. 54% will maintain the same soft goods inventories and 46% will keep the same hard goods inventories. As for major appliances, 15% of department stores plan to reduce their lines, and 54% plan to hold the same level. The remaining 31% do not handle majors.

MORE NEWS ABOUT MARKETING ON:

• P. 78 AMC'S U. S.-Built "Foreign" Car Tests Small-Car Market

• • •

Whirlpool Expands Gas Appliance Line Through Deal to Buy Servel's Business

Questions as to who would buy Servel got an answer this week. Whirlpool Corp.'s president, Elisha Gray, II, announced his company had bought Servel's patents, property, and facilities for about $6.5-million cash. Servel, in turn, he said, "has paid us $1.6-million to assume its contractual obligations to fulfill unexpired warranties."

Whirlpool made the plunge when it received private assurances from individual gas companies that they would promote and sell gas refrigerators. One of the first was Dean Mitchell, president of Northern Indiana Public Service Co.

Whirlpool is already in gas appliances, with a combination washer-dryer, dryer, and range. It is also engineering a gas water heater and a gas incinerator. Said Gray: "A full line of gas appliances will balance and complement the present line of RCA Whirlpool electric appliances, thereby widening the market . . . for all Whirlpool appliances."

Duncan C. Menzies, president of Servel, told stockholders in a letter this week that Servel is in a very fortunate liquid position. **The company has $15-million in cash or its equivalent, and credit lines for an additional $5-million, if needed.** It also has a tax loss carryover of $18-million, which has five years to run.

Menzies says he is looking for "stable companies with demonstrated earning capacity," not in appliances.

• • •

Cigarette Makers Swing Further To Advertising Based on Filters

The strong trend to filter cigarettes (BW—Dec.28'57, p104) is spurring greater competition among cigarette makers and causing an important switch in brand advertising. This week, Philip Morris announced a new filter for its Parliament label, with claims of "the most complete filtering action of any filter cigarette now on the market." At the same time, the United States Tobacco Co. is claiming that its King Sano brand is "lowest in nicotine and tars of any nationally distributed brand."

By stressing filter effectiveness and low nicotine and tar content, manufacturers are moving away from the emphasis on pleasure and taste on which cigarette advertising has been based for the last four years or so.

Along with the filter, Philip Morris announced a price reduction for Parliaments to compete with popular-priced filters.

How freedom from every kind of income tax boosts your net profit in Puerto Rico

How corporate tax exemption would boost your profits

If your net profit after U. S. Corporate Income Tax is:	Your net profit in Puerto Rico would be:
$ 29,500	$ 50,000
53,500	100,000
245,500	500,000
485,500	1,000,000

How dividend tax exemption* would boost your income

If your income after U. S. Individual Income Tax is:	Your net income in Puerto Rico would be:
$ 7,775	$ 10,000
15,877	25,000
25,214	50,000
51,223	200,000

*Dividends are tax-free only if paid to residents of Puerto Rico by a tax-exempt corporation.
Examples are based on Federal rates (Jan. 1, 1956) for single persons.

Why the Commonwealth of Puerto Rico can offer 100% tax freedom to all eligible plants

4 more ways you can profit from a new plant in Puerto Rico

1. Property tax exemption. Granted to all eligible plants for a minimum period of five years—and a maximum of ten.

2. Excise tax exemption. This is a *permanent* exemption on all raw materials, machinery and equipment essential to the manufacturing process.

3. Abundant labor. Puerto Rico has a labor force of 650,000 workers. Thirteen per cent of these are still unemployed.

4. No red tape or tariffs. Puerto Rico is an integral part of the U.S. economic and judicial systems. You can move money, people and goods to and from the U.S. without red tape or tariffs.

LOOK at the impressive figures in the table above. You may well wonder how they come about. Here are the facts:

Puerto Rico is a self-governing Commonwealth within the American Union. This means that Federal taxes do not apply in Puerto Rico—and that the Commonwealth Government is empowered to assess its own income taxes according to its own needs.

Puerto Rico's most pressing need is to attract more industry to absorb its underemployed labor force. That is why the Commonwealth offers all genuinely new plants a ten-year exemption from *every kind* of income tax.

But make no mistake. Puerto Rico does *not* grant exemption to plants that run away from the United States.

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Address_____

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Product_____

American Motors Corp. Line:

Why AMC

George Romney (above and cover), president, is convinced there's a big market for his company's U. S.-built "European" automobile.

Last week, spotlights at the Chicago Auto Show picked out a pale gray, somewhat stumpy, 15-ft.-long vehicle that may be the herald of a new generation of U. S. motor cars. Revolving slowly on its raised turntable, American Motors Corp.'s 100-in. wheelbase Rambler American (picture, far right) made its public bow—in every economic sense a "small car" of the type European companies have been ramming into the U. S. market, to their profit and to Detroit's mild dismay.

The American goes on sale Jan. 30 for less than $1,800, plus only transportation cost and any local taxes. This is well within the price range of short, five-passenger imported cars (BW—Nov. 30'57,p32). It is a two-door model of unchanging style, with a 90-hp. inline six-cylinder engine; in a run from Los Angeles to Miami, it averaged 35 miles to a gallon of fuel at an average speed of 40 mph.

If the Rambler American looks vaguely familiar, it is because its body and much of the sheet metal is the same as the 100-in. wheelbase Rambler

1958 Ambassador; 1958 Rambler; 1955 Rambler; 1950 Rambler; 1957 Metropolitan; 1958 Rambler American (left to right).

Can Gamble on Its Small Car

that Nash (predecessor of American Motors) introduced in 1950 and built until 1955. The American's hood, deck, and roof lines are new, although the original dies are used.

• **Test Tube on Wheels**—While American Motors by no means exercises the leverage on the automobile market of a Big Three company, the new Rambler American has enormous implications.

For the car is a test tube; it is a bold experiment; it might just possibly be the type of answer all U.S. auto companies have been seeking in their desire to appeal to what obviously is a new kind of automobile buyer in a part of the market that is ill-defined, contradictory, and of unknown strength. A quick grasp of the true meaning of the American lies in two questions: If AMC, using fully amortized tooling of a three-year-old car, can bring out low-priced economy transportation and break even on 15,000 units a year, can Ford, Chevrolet, and Plymouth do the same? If they can, what happens to the philosophy that the imports have the market to themselves because of the high production cost of U.S. manufacturers?

• **Dream Child**—The American has a more pregnant meaning at American Motors. Burdened with debt for four long years and on the financial ropes several times, AMC made more than $3-million in the fiscal quarter ending Dec. 31. It is selling its bread-and-butter 108-in. wheelbase Rambler at a 120,000-a-year rate, and can't keep up with the orders. If the 200,000-odd small imported cars sold in the U.S. in 1957 have any significance at all, they certainly must signal that American Motors' indefatigable, articulate Pres. George Romney is cruising along with the pack at the wheel of his small American.

For more than three years—he inherited the AMC presidency from its founder and the pioneer of the smaller car concept, the late George Mason—Romney has been saying the market would swing his way. He believed it sincerely, but convinced few. It seemed to be a natural rationalization for a company stuck with a line of smaller cars when everyone else in Detroit was building bigger cars. Now there are more than tentative indications that the market has swung.

Ford is ready to build a small car in this country when the volume jumps a few hundred thousand more; meanwhile it is stepping up its import of English Fords, and will urge its Edsel dealers to dual with either its English or its German cars. General Motors is importing its British and German small cars. Chrysler is scurrying to make a deal with a foreign builder of small cars. Studebaker-Packard is on the verge of importing a small European car. All of this activity is easy to understand.

I. 200,000 Unknowns

In 1954, there were 32,403 foreign-built motor cars registered in the U.S. The following year, when total registrations shot to the all-time high of 7.2-million, sales of imported autos nearly doubled—to 58,460. Yet, the imports

The Apple fell—why doesn't the moon?

Some say that the apple actually hit Sir Isaac—some say it's just a fable. Apple or no, Newton's discovery of the laws of gravity and motion explained much—including what keeps the planets in their orbits... and why the moon or a satellite doesn't fall!

Newton used mathematics to find the laws governing both apple's fall and moon's orbit. Using similar methods, Taylor scientists pioneered the mathematical approach to industrial process control.

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still accounted for less than 1% of all cars registered that year. Detroit sniffed tolerantly; the entire market had so grown that the imports' performance was not remarkable.

But in 1956, registrations of imported cars again nearly doubled; to 98,187 and 1.65% of the market—while sales of Detroit-conceived products fell 15% from 1955. Registrations for 1957 are not yet complete; but in 10 months, 166,926 new foreign cars were licensed, indicating a year's total of better than 200,000—about 3.3% of all sales.

All of these were not small, economy cars—autos of 100-in. wheelbase or less—but the majority were. In 10 months Volkswagen registrations were 52,573; Renault, 18,127; English Ford, 13,717; British Motors Corp.'s MG, 11,613; American Motors' English-built Metropolitan, 10,187.

And the name plates whose sales picked up fastest were the economy cars: Volkswagen gained about 11,000; Renault, the No. 2 seller, was hardly a factor in 1956 sales; English Fords quadrupled; the Metropolitan nearly doubled. Hillman, while not among the first five for the year, sold 1,125 in October, 1957, vs. 462 for the same month of 1956.

• **Market Enigma**—What bothers Detroit more than these numbers is the kind of people the numbers represent. Detroit knows very little about them. And, lacking knowledge, it speculates—sometimes wildly. The Center for Research in Marketing, Inc., concluded, after a study of the small-car market, that people bought them because they were afraid—scared of the world, scared of the size and of the power of the American-built vehicles.

One of the most realistic attempts to microscope the buyers of imports was a study made last year by Ford Motor Co. of 500 Volkswagen owners, selected to constitute a scientific sample of the VW owners in this country. Two of the most revealing, but at the same time puzzling results: VW buyers have a median income of $7,100 (as opposed to around $5,000 for all auto owners), and 63% of all Volkswagen owners also own at least one other car.

• **Conclusions**—You can, as Detroit does, make two comfortable assumptions from such information. One is that the VW owners (and if you choose, you can project this to all owners of imports) are so well-heeled that economy is not the reason they buy VWs. The other is that, as Detroit dichards have always insisted, small cars are only a "second-car" market, and that the bulk of people who want only one car will always be subject to Detroit.

You have to weigh those assumptions against the fact that the Ford study was concerned with only one make of imported car, and that one a nonpareil. Few VW owners even considered the purchase of a Ford, Chevrolet, or Plymouth—perhaps significantly, however, some pondered the Rambler. They gave scarce consideration to Ford of England's Anglia.

In a recommendation that shows how appallingly little Detroit knows about 200,000 new-car buyers of 1957, the Ford market analysts suggested further surveys to determine the scope and depth of the small-car market, especially for the English Fords.

Perhaps the reason Detroit appears to know so little about this new market is that it developed while the industry's brass were looking the other way.

II. Market That Grew Unseen

Imported cars didn't "make" a market in this country for small, economy vehicles. They "found" one. For years, Detroit auto executives have thought they knew exactly what the passenger car market in the U.S. required.

The car had to have luxury—customers demand more gadgets to take the work out of driving. It had to have power—to accelerate and pass safely. It had to have size—for Americans equate their standing in society with the size of their motor cars. And it had to have fresh style every year—for Americans like color, sleekness, lowness.

The ugly, beetle-shaped Volkswagen distorted that image and it has become unrecognizable as the other small foreign cars pressed in on it from every side. Sales of domestic cars fell, Detroit said, because of credit restrictions in 1956, because of an "over-sold" market in 1955, because of not enough dramatic style changes in 1956 and 1957. But here are the 1958 cars, bigger, more powerful, lower, longer, and many restyled in the chrome-splashed fashion that once made Detroit's image so true and shining. And with a few exceptions, sales are starting out dull again, with an indicated 1958 sales total of only 5.5-million domestic cars.

• **Off Course**—It's plain to some observers that while Detroit has been going in one direction, a horde of customers have abruptly changed course. Since 1955, cars have continued to increase in price; their engines have continued to increase in power and fuel consumption while gasoline prices have likewise increased. The fanning out to the suburbs, which Detroit has counted on to make its products more essential, seems to have developed a pattern of "wants" that defeats Detroit's aims.

This changing pattern seems to put the automobile in a frame of transportation only. This is hideously hazardous for Detroit. If a motor car is merely transportation, it may make more sense to own two small inexpensive cars instead of one big vehicle that can go only one place at a time. More than 6-million American families own more than one car.

There are still, however, many customers who want the dollar symbol in their driveways. If they can't afford a medium-priced car, they'll buy the most expensive of the "low-priced," cars loaded with extra equipment. The stripped job, or a used car, screams that the family can't afford anything better. But a foreign-made car is a sign of distinction, utterly lacking any stigma of low income.

• **No Explanation**—So, there are a lot of contradictions in the U.S. auto market. You can recognize them. All you can be certain of is that, by-and-large, the U.S. automobile industry has been moving away from a sizable segment of all car buyers; by-and-large, but not in toto. For American Motors, alone in this country, for seven years has stuck by a belief that there was a market for a smaller, U.S.-built motor car.

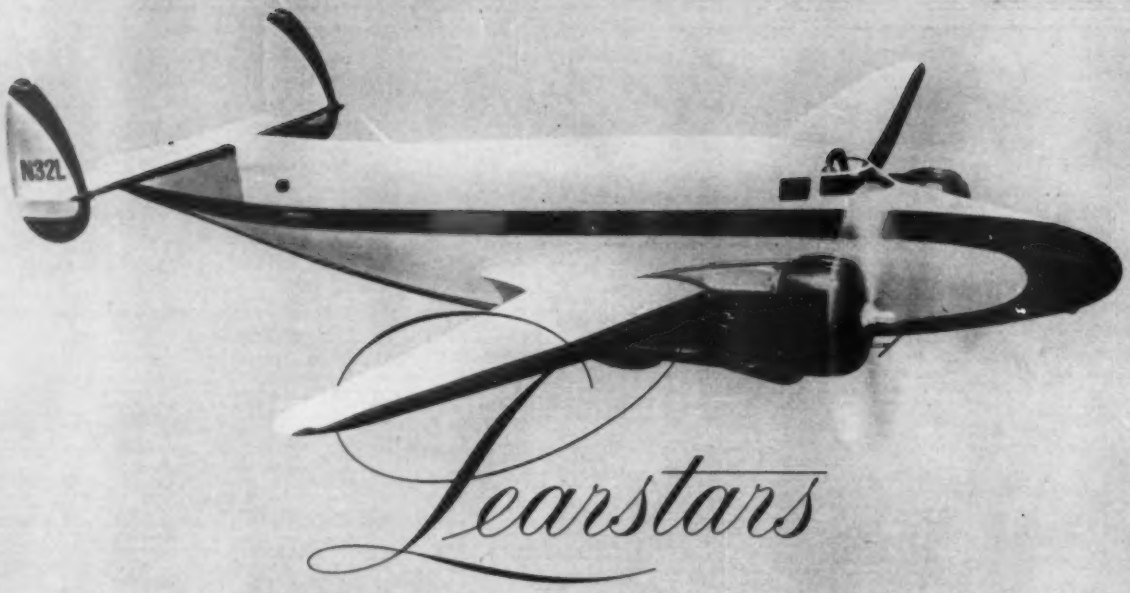
III. AMC on the Flank

"Frankly," said George Romney last month, "we very nearly got knocked out of the automobile business in the process of succeeding in our audacious decision to challenge the Big Three by flanking their product position."

Just 15 months ago, before it could wind up its 1956 fiscal year, AMC had to refinance and get a moratorium on long-term debt payments to maintain required working capital. At that time, it owed more than $50-million. At the end of its last fiscal year, Sept. 30, 1957, it still owed $41-million, which had been shaved down to $32-million by Dec. 1. Even more striking is what happened to AMC's bank debt: $36-million in September, 1956; down to $18-million on Dec. 1, 1957.

The notable achievement in that $3-million first-quarter profit (the first since June, 1955) is not its size but its very existence. For AMC has been churning up giant losses since it was formed May 1, 1954, by a merger of Nash-Kelvinator Corp. and Hudson Motor Car Co. (BW—May1'54,p34). Its September report carried an operating loss of more than $22-million (reduced to $11-million by carry-back tax credits). In 1955, its operating loss was more than $17-million, again partly offset by tax credits. For 1956, AMC's operating loss shot above $31-million, trimmed to below $20-million by sale of stock in a subsidiary; and in its past fiscal year, the operating loss was $11.8-million.

Altogether, from losses before and since the merger, AMC has a carry-forward loss for tax purposes of $47-million. This appears to have been the item that principally caught the eye of



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Louis Wolfson a year ago and prompted him to buy enough stock to become AMC's largest single holder (BW—Mar. 16'57,p48). Wolfson, as well as Romney, is believed to be interested in using the tax credits as a shield behind which to pull together a group of appliance companies with Kelvinator as the nucleus.

But that will be only a dream scheme unless AMC continues to make money, because carry-forward losses are no good unless you have a taxable profit for them to offset. That's where, if Romney's judgment of the auto market is of any account, AMC's auto product line becomes important.

• **Lone Traveler**—American Motors, under Romney's prodding—and perhaps a bit of Wolfson's, too—has deliberately forsaken most of what the bigger auto companies hold dear. You can, if you want to pay big-car prices, get all the big-car trappings on AMC's cars. But there is no long, hat-crunching lowness (the American is 57 in. high). All AMC products are what Romney calls "compact" (the 117-in. wheelbase Ambassador and 108-in. wheelbase Rambler), or "small" (the 100-in. wheelbase American and the 85-in. wheelbase Metropolitan).

• **AMC's Driver**—Because of his company's position, as well as its products, George Romney has become the evangelist in America of the coming of the small car.

A rugged, well-knit man of 50, Romney drives himself unmercifully from a dawn rising until late at night, preaching unremittingly on economy and small cars. Much of AMC's improved financial position is due to his penny-watching.

For one of the auto industry's best-known personalities (he had been head of the industry's trade association) George Romney was still little-known as a manufacturing company boss when he succeeded to the AMC chairmanship and presidency upon George Mason's death in October, 1954. He went to Nash-Kelvinator in 1948, became executive vice-president and Mason's right hand in 1953.

It was Mason who brought out the 100-in. Rambler first in 1950 and the Metropolitan in 1954. And it was Mason who rammed through the merger with Hudson—and who died before hardly anyone knew exactly what he had in mind for it. Few in the auto industry thought that Romney could (1) do much to untangle the debt-ridden and over-lapping facilities and organizations; or (2) do very much with a half-formed product philosophy that at the time seemed to be going in the wrong direction.

Romney hacked and pruned the structure and argued the product lines farther in the direction of small cars. It was a desperate gamble to stay in business long enough for a new type of market to arise. The gamble is looking better. Whether it finally pays off depends on a future over which others have more control than Romney.

IV. Spotlight on Big Three

Perhaps ironically, considering the history, the future development of the small-car market in the U.S. rests not with George Romney and his American Motors Corp., but with his big competitors—General Motors, Ford, and Chrysler. Only they have the resources to give small cars the solid kind of push they would need to become a dominant factor in U.S. auto sales.

Sales of small cars, the majority of them from abroad, will continue to grow, reaching about 300,000 this year. Best guess around Detroit is that—with the present pattern of production and distribution—small cars will peak out at about 7.5% of the total in the next few years. Imported car sales in any one of the next few years are very unlikely to exceed 500,000.

• **Why**—There are many reasons. Probably the greatest is the lack of shipping space. Next is lack of production capacity abroad—although with the Italians, Japanese, and perhaps even the Czechs, competing, the capacity problem might be overrated.

The third reason is purely bound to Detroit concepts. W. C. Flaherty, Chrysler's director of business research, puts it this way: "The fortunes of the new-car market for foreign makes depends a good deal on the development of used model markets for them. Foreign car manufacturers will be forced to innovate to improve their long-term sales."

Accordingly, thoughtful industry observers are convinced that continued expansion of the small-car market in the U.S. must come from within. There is strong compulsion for this conviction. For one thing, many persons in Detroit have a vague feeling that no one yet has designed and built the sort of small car the bulk of Americans would like to buy. Further, no one thinks he knows what kind of car it would be; but in theory, anyway, only an American firm would be in a position to make such a determination.

• **Profit Picture**—Also, there is the matter of profit.

A U.S. auto company would make more dollar-per-car of profit on a vehicle produced here than on one built by a foreign affiliate. If a U.S. company decided to shoot the moon and put on the market 100,000 or so small cars, it would have to assure its stockholders that profits from the small car would offset any diminished earning results from its other cars. That could only be done if the small car were to be produced in this country.

As long as they can continue to cover their market position with cars built abroad, there is no reason the Big Three have to hurry a decision on whether to build small cars here. The complications of such a decision are tremendous. There is, first, that matter of concept of the car. Beyond that, there is the stark economic fact that, as they are presently constituted, the Big Three cannot produce a new small car economically for a market of the size predicted for the next few years.

Here, approximately, is what would be needed: engine tooling, $50-million; assembly plant, $20-million; body design and tooling, $100-million; assembly plant, $35-million. Total, $205-million, plus design, tooling and production of components and parts. On that basis, the car would have to sell for more than $2,000 on a volume of 100,000 a year.

• **Reservations**—Other than doing what AMC has done, in using revamped tooling of an older model, that estimate of the starting-up cost is subject to two big reservations. For one, the chief engineer of a Big Three division says the auto industry needs a form of technological breakthrough on small-car engineering and production—just because it cannot proceed on any such cost basis as outlined. There is another way to side-step such costs, but it involves converting existing facilities to small-car production. That might mean sacrificing one complete line of cars—say a medium-priced model.

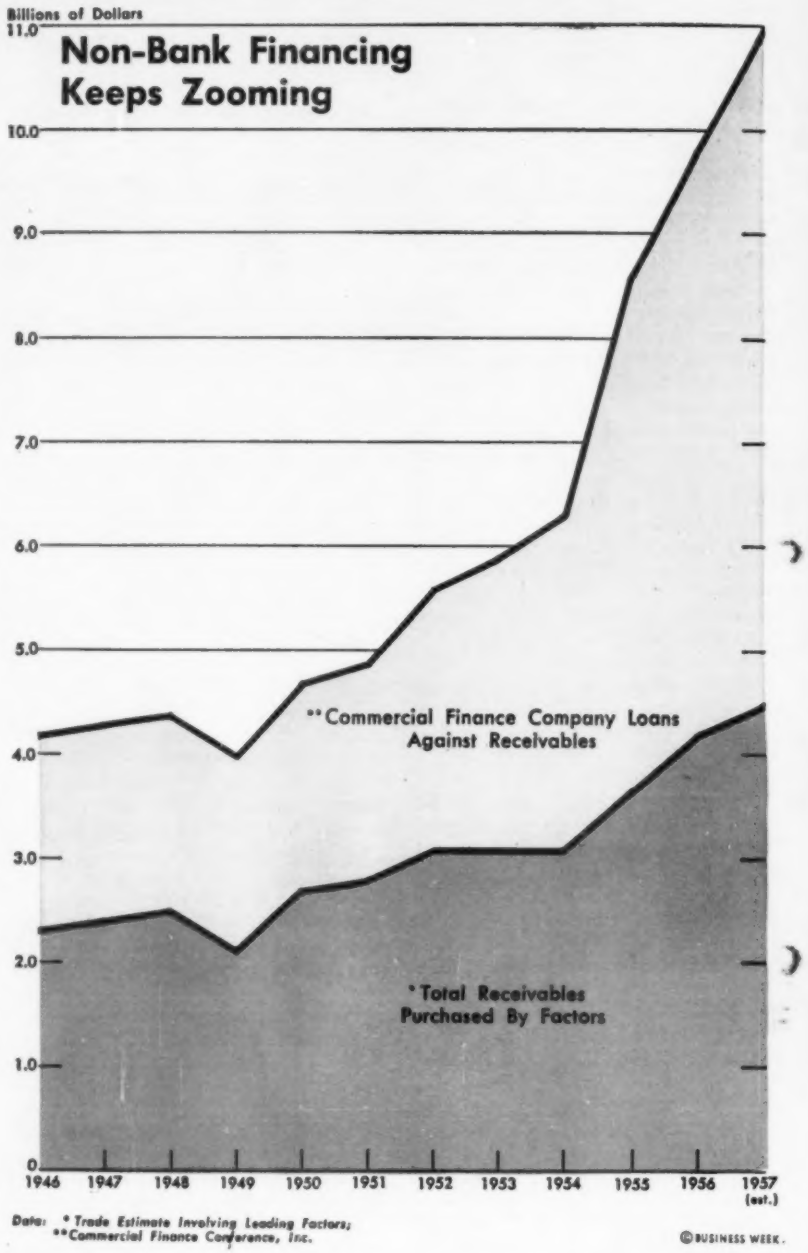
That probably will be what is done if and when a Big Three company moves into domestic production of a small car. For the way the auto market is shaping up in the view of some highly placed auto executives, they won't need all of today's capacity for today's type of car. They see two big market areas in the future. There will be small, economy cars. But there also will be the big, elaborate vehicles so scorned by the small-car clique.

• **Creating a Market**—Short of the technological breakthrough mentioned by the engineer, any decision by a Big Three company to produce a small car means it would have to "go for broke." For economics would compel it to make a market for hundreds of thousands.

No chart-watcher in Detroit is rash enough to forecast when the small-car demand would be ready for such an avalanche. A jubilant George Romney is sure it won't be long now. But one quarter's profit doesn't make a prophet. But right now—to auto industry observers too often tempted to believe that GM, Ford, and Chrysler have a monopoly on brains—George Romney looks like the smartest or the luckiest man in Detroit. END

Receivables Financing Soars

The sale of receivables has shot way up as a means of non-bank financing, but not so fast as loans against them.



THE POSTWAR boom has brought a tremendous flowering to many a trade—and few of the growths have been more lush than that of the commercial finance companies.

This upward drive has been generally ascribed to the enormous increase in installment buying by consumers. Less often noticed, but of massive importance, has been the growth of non-bank corporate financing, most frequently in the forms of factoring—the buying of accounts receivable—and of loans on receivables (chart).

• **Estimates**—There are no official statistics in this field, but reliable trade estimates are that last year the combined total of factoring and loans against receivables reached a record $11-billion. That's about 12% above 1956, double the 1952 figure, and 2½ times that of 1946.

One leading lender in the non-bank field sums up the reasons for this swift increase, with its heavy acceleration in the past five years:

• The growing corporate need for "liquid" working capital (BW—Jan.4 '58,p56).

• The difficulty of obtaining bank loans, under the tight money conditions prevalent since 1952.

Of the two popular types of non-bank financing, factoring is by far the older. In the textile industry, its principal fortress, it has been the most popular method since the early 1800s. On the other hand, loans on receivables have been growing at a more rapid pace in the past five years.

I. Factoring

In factoring, the manufacturer sells his accounts receivable to a factor, for cash and at 100% of face value. The factor then takes over the whole job of collecting the bills from the customers of the manufacturer. He assumes all the risks, waiving the right to proceed against the manufacturer if the customer fails to pay up. In practice, the factor is protected by the fact that he has checked and O.K.'d the credit extended in the first place by the manufacturer to his customer.

For the manufacturer, factoring means that he gets cash for his goods as soon as they are shipped to the customer; he does not have to wait for the 30, 60, or 90 days of delay provided by the terms of the invoice. This quick payment is especially valuable to the manufacturer in a seasonal line. It enables him to get cash just when he needs it most—at the peak buildup of his production, just before the start of the main selling season. Indeed, factors frequently go a step further with trusted clients, allowing them to take down advances against anticipated receivables. This helps the manufacturer to buy raw materials without excessively depleting his working capital.

• **In Textiles**—Factoring is especially suited to the textile trade, where operations are usually seasonal, often complex, and always a problem for the small manufacturers who make up so much of the industry. However, since the war factoring has been increasingly adopted by numerous companies in such diverse fields as paper, plastics, chemicals, furniture, electronics, machinery, shoes, hardware, luggage, paints, toys, and sporting goods.

The factor, of course, does not provide his services for reasons of undiluted benevolence. He charges both

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There's a fever about New York that never subsides... a characteristic "hustle" that's always there, regardless of time. And everywhere, 24 hours a day, there is power—electricity, serving a million varied functions.

And wherever you find electricity, chances are you'll find Federal Pacific equipment. The Empire State Building, for example! R. H. Macy & Co.! The Sinclair Building! Rockefeller Center! The list is endless. You'll find Federal Pacific everywhere—from the utility where high voltages are controlled and distributed through giant oil circuit breakers... to substations where bulk power is "sectioned-off" for particular areas... to the switchgear, panelboard, circuit breaker and control installations upon which the safe utilization of power depends.

And so it is in city after city across the nation. Federal Pacific equipment is evident everywhere. Why? Because Federal Pacific leads in quality... consistently finds better, more efficient ways to control electricity for home and industry.

FEDERAL PACIFIC ELECTRIC COMPANY
Main Offices: 50 Paris Street, Newark 1, New Jersey

FEDERAL FPE PACIFIC

Better Products to Control Electricity

interest on his money and a fee for assuming the risks of collection. Traditionally, the interest on the money advanced to the manufacturer up to recently had been calculated at an annual rate of 6%, covering the time from the making of the loan until the customer's check in payment has been finally cleared. Lately, however, the higher interest rates assessed factors on their own bank loans have forced an upping of the charge to a little above 7%.

• **Fee for Risk**—As for the fee charged for the risks and services of collection, it varies widely with the volume of sales involved, the number and difficulty of bills to be collected, and the extent of the risk. According to trade sources, these assessments usually range between 1% and 1½%, with average charges recently running a bit above 1%. In extreme cases, with a great many small accounts to collect, the assessment may run up to 2%; if the collection is very simple it may drop to ¾ of 1%.

There are signs now that the interest rates, if not the fees, may soon start sinking. Many of the factors tie their interest rate to the prime loan rate that the banks charge for lending to the leading factors. This rate is now 4½% in New York. Under the tie-in system, for each ½ of 1% move in the bank rate, either up or down, the factor makes a corresponding change of ⅛ of 1% in his rate—that's 5% of the old basic 6% charge. A drop in the banks' prime rate is widely expected fairly soon.

II. Loans on Receivables

"Accounts receivable financing" is the trade jargon for factoring's fast-growing rival in the field of non-bank commercial financing. It works this way: As soon as a manufacturer ships an order to a customer, he receives a cash advance of 90% of the face value of the shipment and it's a strictly confidential deal; customers are not notified of the arrangement. And you're on your own in passing on the credit risk involved.

The payment to the lender is simpler than in factoring, since it involves only interest on the money loaned. But the interest charge is stiff, generally calculated at 1/30 of 1% per day, which works out to an annual rate of 12%.

The beauty of the loan on receivables to the manufacturer is described this way by one lender: "As your sales increase, cash advances increase in proportion, and constitute a continuous revolving fund available as long as you require it."

III. The Advantages

Within the non-bank lending trade, there are many institutions that go in for both factoring and lending on receivables, while still others concentrate exclusively on one or the other. There are lively arguments inside the family as to which works better for a given corporation, but there is a happy unanimity in defending their advantages over regular bank loans.

The argument starts from the evident fact that the costs of factoring and loans on receivables run well above the rates charged by banks. Even the lenders in these fields admit that their fiscal services are not cheap, but they argue strongly that the differential is actually much smaller than it looks.

Their reasoning runs generally like this: In the first place, they say, few of their fiscal clients would be able to qualify for the prime rate charged by the banks, especially in times of tight money; most of the borrowers would have to pay considerably more than 4½% interest. On top of that, to secure bank loans they would have to maintain compensating balances in the lending bank, which would substantially boost the effective cost of borrowing.

• **Idle Money**—The relative cost is also eased by the fact that if you use factoring or loans on receivables you have no need to keep money lying idle after the bills are paid, piling up to pay off loans later. Instead, your loans are automatically retired as receivables are paid off.

One lender points out another advantage in factoring, to justify the higher cost from the borrowers' angle. "They get credit services and marketing aid," he says, "that would otherwise cost them a fortune." When a manufacturer sells his receivables to a factor he gets rid of such expenses as credit services, bad debts, the troubles and expenses of collection, and bookkeeping charges.

The manufacturer extracts another advantage: Since in self defense the factor must pass on every sale made by the borrower, he gets to know very intimately how his customer's business works, and so is in a position to make valuable suggestions on production, sales, and management.

• **The Other Side**—The strength derived from this closeness of the factor and his client has a balancing weakness—one that may well account for the slower growth of factoring, compared with loans on receivables. The weakness is this: The customers of the manufacturer must all be notified on the invoice that the bill is to be paid to the factor. This notification is repugnant to many manufacturers, who are well aware that their competitors and suppliers may snort scornfully at "a company so ill-financed that it must resort to hocking its receivables."

The factors themselves hoot at this, claiming that notification has worked well for a long long time in the textile business, where—they say—it is regarded as a badge of sturdy backing rather than of weakness. Off the record, though, many factors admit they have trouble selling this theory, while manufacturers often cite notification as their reason for favoring loans on receivables.

As this pudding proves out, factoring is losing considerable ground to its rival. In 1952, factoring ran to $3.1-billion, against $2.5-billion in loans on receivables. Last year, the standings were reversed. Factoring had climbed a modest 45%, to $4.5-billion, while loans on receivables had shot up to $6.5-billion, more than 2½ times the earlier amount.

FINANCE BRIEFS

Standard Oil of New Jersey is voting confidence that the "cyclical adjustment" in the economy will be brief and that 1958 will be a record year for the oil business, worldwide. Chmn. Eugene Holman announced plans for capital spending of $1.38-billion—only a shade under last year's $1.4-billion.

•

Business loans by major New York banks increased by only $439-million in 1957, compared with a gain of more than $2-billion in 1956. At yearend, $11.7-billion was outstanding in such loans.

•

Merger feelers will be "explored," Chmn. Adrian M. Massie said after a special meeting of New York Trust Co. directors. Before the meeting, Massie had conferred with large institutional investors who are said to hold nearly 20% of the bank's stock. In 1952, New York Trust came close to merging with Manufacturers Trust Co.

•

Bill collections are the slowest since June, 1955, the American Collectors Assn. reports. Overbuying was singled out as the chief cause of the difficulty in collections, though layoffs and unusually widespread illness were also mentioned as factors.

•

Airlines expect a 6% to 9% gain in traffic this year, according to W. A. Patterson, president of United Air Lines, but profit margins will suffer unless the CAB grants fare relief (BW—Nov.2'57,p57). United plans to wait at least two years before buying another 40 medium-range jets, which it hopes to pay for by equity financing.

•

The first group dental insurance plan has been made available to the United Nations Secretariat staff, whose members will share the cost with their employer. Emphasis is on preventive care; employees can choose their dentists.

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productive giants—or shackled Lilliputs?

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Rockwell Report

by W. F. ROCKWELL, JR.
President
Rockwell Manufacturing Company

THE ACID TEST OF THE MANAGER comes not during times of happy expansion, but during adverse periods when cutbacks are necessary. We are constantly working to develop managers who can make the unpleasant decisions as promptly as they make the pleasant ones. Our plant managers, for instance, have more latitude for decision making than men in comparable jobs in many other companies. Each is encouraged to run his plant as if he owned it and to make as many decisions as possible without referring questions to headquarters.

The same thing goes for regional managers of our product sales organizations, divisional managers, and even department heads—all, of course, within the framework of company objectives. This means the kind of a communications system that keeps these men informed about the company and keeps headquarters informed about them, without burdening anyone with too much paper work. And it also means a constant alertness in measuring men, evaluating their development in terms of the main quality we are always seeking.

That quality we call "Managerial Maturity."

Actually it is a blending of many qualities: the ability to assemble facts about a given situation; to separate significant facts from the unimportant; to understand them; and draw conclusions from them. When a man can do all of these things, he is almost ready to be a manager. But there is something more.

If, after doing all of these things on a matter within his area of responsibility, he sits on his conclusions and does nothing—he still has a long way to go. Or if he conveys his findings to his superior and asks for a decision, he is not yet ready.

But if he faces up quickly to the need for a decision, and if he has the courage to make that decision without being told to make it—no matter how unpleasant it may be—he has achieved "Managerial Maturity."

* * *

Announcement ads appear this month on the new Delta Hand Screw Machine developed by our Power Tool Division. The new tool, which features a bed turret with six stations, fills the production gap between the standard engine lathe and expensive automatic and semi-automatic screw machines. Since it is ideal for manufacturing parts even in fairly long production runs, we feel it will be welcomed by many companies that are now giving capital investments extra careful scrutiny.

* * *

Early last month we declared, for the second consecutive year, a 4 per cent stock dividend to stockholders. This is in addition to the regular quarterly cash dividend paid early in December, and is in line with our policy of periodically considering supplementary stock dividends as evidence of our shareholders' growing equity.

* * *

Our new plant at Kearney, Nebraska, went into limited production last month on Rockwell-Nordstrom lubricated plug valves. Since this is the first major manufacturing enterprise in a predominantly agricultural area, we have been training personnel for the past twelve months in a training plant in order to shorten the time required to get into full-scale production.

One of a series of informal reports on the operations and growth of the

ROCKWELL MANUFACTURING COMPANY
PITTSBURGH 8, PA.

for its customers, suppliers, employees, stockholders and other friends

Wall St. Talks . . .

. . . about slicing dividends . . . brokers' costs . . . New York's biggest bank . . . market pattern.

Latest dividend shavers: Borg-Warner Corp. has clipped its quarterly dividend rate from 60¢ to 50¢ to conserve working capital in view of 1957's slightly reduced earnings and "in anticipation of lower income in 1958." . . . Bunker Hill Co., large lead-zinc-silver miner, will pay only 5¢ this quarter. Its two previous quarterly payments were 15¢ each; before that 30¢ was paid each quarter.

Some brokers, facing persistently rising operating costs, are considering assessing monthly or quarterly "service charges" against "inactive" clients.

Chase Manhattan Bank is again the nation's second biggest and New York's largest bank. At the yearend it had deposits of $6,885-million, compared with the $6,693-million reported by rival First National City Bank, which last spring had surged ahead of it in deposits as a result of special, temporary factors (BW—Apr.13'57,p90).

One Streeter warns that the current market pattern is one that "often appears when prices are about to top out for a while."

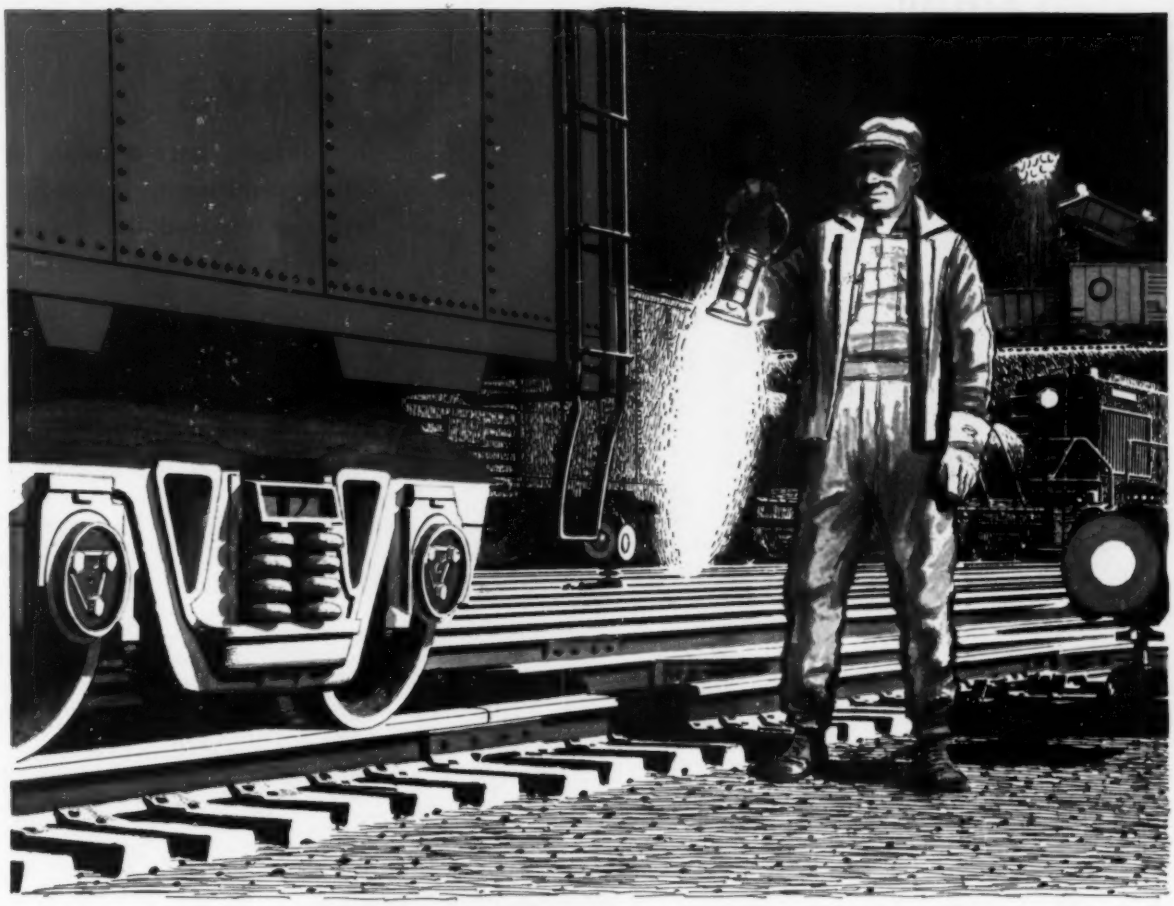
One light that failed: the shares of Shahmoon Industries, which soared so spectacularly in 1955-56 under the impetus of fantastic rumors. They are now available at around $9½, compared with their 1956 high of $50.

Another rumor casualty? Says Secy. C. C. Buckland of Minneapolis-Honeywell Regulator Co.: "Not to my knowledge" is M-H considering a merger with Texas Instruments.

First 1958 sale of a Big Board seat bore a $69,000 price tag, $1,000 less than the last 1957 sale.

Signs of the times; a financial district jeweler reports that the local Christmas rage was for bracelet charms, key chains, money clips, and so on, with the "bear" motif.

A gold mine the Street should tap, according to one broker, is the nation's "legitimate" race track betting crowd. At the horse parks last year, he points out, their wagering rose 3% to an all-time high of almost $2.3-billion.



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What's in the car? It makes no difference. Perhaps nothing you could possibly use or want yourself. But *every* loaded freight car, carrying raw materials to our factories and finished products to our markets, contributes to the growth of our national economy . . . which means better living for us all.

Since World War II, America's railroads have invested more than 12 *billion* dollars in better equipment to help our country prosper.

Now, to capitalize fully on these vast improvements, they are overcoming a major remaining bottleneck . . . the ever-recurring hotbox . . . by equipping freight cars with *roller bearings*.

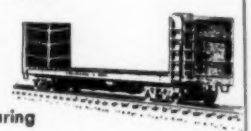
HYATT Hy-Roll Bearings on thousands of freight cars in every kind of service are proving they can banish costly hotbox delays for good . . . sharply cut replacement, lubrication and inspection costs.

That's why every new car equipped with HYATT Hy-Rolls helps *all* railroads . . . and through them, helps *you*. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

Another GM contribution to railroad progress

3,700,000 CAR MILES WITHOUT A SINGLE HOTBOX

Since December, 1953, 100 CHESAPEAKE & OHIO 50-ton Pulpwood Cars Have Totalled More Than 3,700,000 Car Miles On Hyatt Hy-Rolls Without a Bearing Failure of Any Kind!



HYATT HY-ROLL BEARINGS

FOR NON-STOP FREIGHT

1908–1958 GM FORWARD FROM FIFTY

BUSINESS ABROAD

Last Ditch for Dutch in Java

DUTCH, GO HOME: In Djakarta, the offices of Borsumij, the big Dutch trading company, have been daubed with nationalistic slogans.

EXODUS: The reaction to Indonesia's seizure of Dutch holdings has been flight back to Holland. So far, 9,000 Dutch have headed home like the family above.

In Indonesia, once a center of Dutch investment, nationalist fever has reduced Dutch companies to a holding operation.

One company on its last leg in trouble-ridden Indonesia is N. V. Borneo Sumatra Handel Maatschappij—known as Borsumij (picture, left).

As one of the Big Five trading companies headquartered in Holland and based in Indonesia, Borsumij is a good example of how Dutch companies in the 3,000-island archipelago have been making the best of a pretty bad situation since Indonesia won its independence in 1949.

Just over a month ago, Indonesian nationalists—backed by Communists—swooped down on Dutch plantations, companies, and offices. It was the beginning of the final blow to Holland's centuries-old economic interests in the oil, tin, rubber, and spice islands.

• **Flight Into Holland**—Since then, some 9,000 out of 46,000 Dutch workers and dependents have left Indonesia for Holland (picture). Borsumij's 41 offices throughout the islands are still open for business. But 15% of its 250-man Dutch staff and 60% of their dependents have already headed for Holland—even though the company has not recommended evacuation.

The takeover of the last remaining Dutch properties has thrown Indonesia into a state of economic chaos. Nevertheless, Pres. Soekarno is continuing his anti-Dutch campaign—outside Indonesia. In a tour of India and Egypt—plus other Asian countries—he hopes to drum up support for Indonesia's claim over West New Guinea, now ruled by the Dutch.

Soekarno already has used Holland's refusal to hand over this jungle territory as an excuse for playing on Indonesian emotions and getting leftist labor groups to kick out the Dutch.

• **Both Sides Losers**—If Borsumij is any example, Indonesia has been as much the loser in this struggle as Holland—at least, in economic terms. Since 1949, Borsumij has gradually transferred a large part of its capital and its operational base to Holland and other countries around the world. Other Dutch companies operating in Indonesia have followed this same program of getting out and diversifying. While official figures put Dutch assets in Indonesia at roughly $1.2-billion, their present market value is closer to $200-million. And while Holland de-

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PRESIDENT of Borsumij is Jacobus W. Schlimmer, 74, who is pushing company expansion outside Indonesia.

pended on Indonesia for about 15% of its national income before World War II, it now gets only around 2% of its income from the islands—and is building up its investments elsewhere.

Meanwhile, the Indonesian economy, long dependent on the Dutch for its foreign trade, has gone downhill—with few competent Indonesian businessmen available to brake the slide.

• **One of Five**—Borsumij is only one of several hundred trading companies that have run plantations, managed small industrial plants, and handled export-import trade in Indonesia. But it is one of the Big Five—Internatio, Lindeteves, Geo. Wehry, Jacobsen Van den Berg—the giant traders that have controlled the bulk of Indonesia's far-flung trade with the rest of the world. Borsumij alone has a turnover of around $60-million in its annual business and makes roughly 3% net profit on its buying and selling.

Traditionally based in Indonesia, the Big Five have taken one blow after another since Indonesia became independent in 1949. The Indonesians have set up trading companies of their own. They have given these new trading companies the exclusive right to import certain types of goods. They have encouraged trade unions to make trouble for the Dutch trading companies. They have added all sorts of red tape to the already complex business of exporting and importing. They have prevented companies such as Borsumij from remitting profits to the home office in The Hague.

• **Surprising Violence**—Thus, against this long-standing background of interference, Borsumij was not altogether surprised by the recent "nationalization" moves of the Indonesian government. What was startling, was the violence of the nationalist outburst.

Since December, Communist-inspired labor groups have assumed partial management of Borsumij's offices in Indonesia. Government troops have taken up posts nearby—supposedly to protect Dutch personnel from violence.

So far, Borsumij's offices have not had to hand over their books to the Indonesians. They continue to send cables and mail to Holland. Most shipments to and from Indonesia still go through. Borsumij and the other trading companies expect the government in Djakarta to tighten its grip in the months ahead. But they don't expect full-scale nationalization, on the optimistic assumption that the government would then have to pay indemnities.

• **Holding Operation**—In any case, Borsumij sees the handwriting on the wall. Like other trading companies, it regards Indonesia as a holding operation—with final retreat not far off. In the meantime, despite diversification, Borsumij has been hard hit by the Indonesian turmoil.

Some 60% to 70% of its commercial interests are still in Indonesia. Throughout the islands, it employs about 7,450 Indonesians and Chinese (plus 250 Dutch)—about 10 times more workers than it employs in all its 27 offices outside Indonesia. In 1956—for the first time in history (except for the period during World War II)—Borsumij did not pay a dividend. That was mostly due to Indonesian restrictions on remitting profits. And it won't pay a dividend for 1957, either.

For Borsumij and the other trading companies, an end to business in Indonesia would be a psychological—as well as a financial—blow. There's hardly a Dutch employee of these firms who has not served his time in the islands. "We have lived the greatest parts of our lives in Indonesia," says Jacobus W. Schlimmer, Borsumij's 74-year-old president (picture, above).

• **Three Generations**—The history of Borsumij is the story of three generations of the Schlimmer family. In 1815 King William I set up the Netherlands Trading Society to take over the commercial activities of the Dutch East India Co., which had more or less ruled the Dutch East Indies (now Indonesia) since 1602. Jacobus W. Schlimmer, father of Borsumij's president, was the manager of the branch office of NTS in Bandjermasin, Borneo.

In 1883, NTS decided to restrict its trading activities and concentrate on banking. (It's now one of Holland's leading banks.) Schlimmer sailed to Holland, scraped together capital, and took over the trading of NTS in Borneo and Sumatra under the name Schlimmer & Co. Ten years later, with other Indonesian offices opened, the company became the Borneo-Sumatra Trade Co.

From the beginning, Borsumij did a

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. . . to see for himself how much time it will save on his figurework

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Established 1892—Manufacturers of men's and women's gloves.

Plans for each of these 3 companies embraced research, improved inventory and production controls, modernization and expansion through new equipment additions and the addition of new lines. The acquisition of these companies by Aetna Industrial created new horizons of growth for each. . . . They are all now operating profitably.

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thriving business. It represented big Rotterdam tea, coffee, and tobacco companies in Indonesia. It handled Indonesian imports from Holland's textile factories. Until the 1920s, it was the exclusive distributor for Royal Dutch Shell in parts of the islands.

• **Global Growth**—Under Jacobus W. Schlimmer, the founder's son, and Jan H. Schlimmer, third-generation managing director, Borsumij has expanded all over the map. In 1933 it opened an office in Osaka, Japan. In the next few years, it set up small industrial plants in Indonesia for making bicycles, drugs, paints, textiles, and beer. In 1937 it opened an office in New York. After World War II, it had to rebuild demolished plants and offices in Indonesia. Meanwhile, the company has been acting as shipping agents for such companies as Lykes Lines Agency Inc., American President Lines, and the German HAPAG and as insurance agents for Lloyd's of London.

Now Borsumij's management is setting its sights on places other than Indonesia. Since the end of World War II, it has opened 25 offices outside Indonesia—in Hong Kong, Singapore, Kuala Lumpur, Montreal, Toronto, Sydney, Melbourne, Brussels, Hamburg, Lima, and other important cities or ports. In 1955 it bought a large interest in Twentsche Overzee Handelmaatschappij of Enschede—a Dutch trading company with 17 offices, mostly in East Africa.

More important, Borsumij is banking on trade in and out of the U.S. as a partial offset to its difficulties in Indonesia. It has offices not only in New York, but also in San Francisco, Chicago, and Houston—the latter two opened just last year. The company is a distributor or agent for some 25 U.S. companies, including Armco Steel, Quaker Oats, and Wrigley. Altogether, the company's offices here are doing a $15-million turnover, or roughly 25% of Borsumij's total annual volume of business.

• **Survival Gimmicks**—Meanwhile, Borsumij and other Dutch traders are using a variety of techniques to get what they can out of their Indonesian holdings. They won't talk openly of their methods. But several companies have set up "local subsidiaries"—actually dummy companies—to get along better with Indonesian laws. They have shipped goods in and out of Sumatra without going through formalities in Djakarta. To get at least some small profits out of Indonesia, they have transshipped Indonesian exports through the U.S. And while sticking by Indonesian laws that limit certain types of imports and exports, the trading companies have frequently used Chinese and other middlemen to make shipments—and looked the other way. END

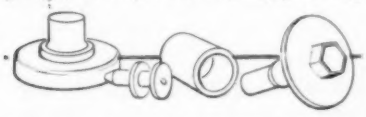
A look over the president's shoulder at Townsend

The metal parts shown on this page are most unusual even though this fact may not be apparent from their shape. Why? Because we mass-produce them all by cold-forming, at low cost, with great strength and with critical dimensions held to tolerances as close as .001 inch. Also, because they are the result of completely new cold-forming and finishing techniques.

These techniques were worked out recently by the Product Research and Development Department of our Townsend Division at New Brighton, Pa.

Part Of Diversification Plan

Since this activity is an important part of the previously discussed overall plan for growth and diversification for this 142-year old company (BW 11/2 and 11/30), you may



be interested in knowing how this group functions and what it could mean to you.

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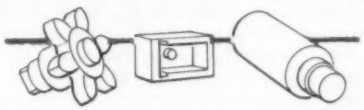
This department consists of a group of specialists in metal forming. They are men of vision who look far afield from standard practice to reach their objectives.

These research men have a free hand with their experiments. They have for their exclusive use an array



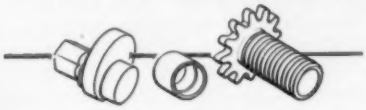
of precision machine tools in addition to numerous pieces of production cold-heading equipment, impact presses and related equipment. In developing special parts they often combine such processes as cold-heading and impact extrusion. Or, they may specify interim heat treatments and coatings. As a result, they have succeeded in extending the range of standard production equipment far beyond its ordinary limitations.

Many Advantages

The need for such service has been apparent for some time. Our field engineers report constantly that many customers would like to take advantage of the strength, improved quality, close dimensions, and economy of mass-producing parts by cold-forming.

Until recently, the physical limitations of the cold-forming process have forced many designers to accept parts which were made by other, more costly, methods.

Now, through this Product Research and Development Department, we are overcoming many of



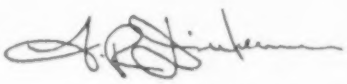
these physical limitations. We are forming many intricate shapes; tubes with solid bottoms—tubes with internal changes in dimensions—items with heads and shoulders on one end and tubular portions on the other are but a few examples.

Truly, all of the parts are remarkable demonstrations of the versatility of these new techniques. They point up the fact that we are now producing items which only a short time ago could not have been considered.

Effect On Future Growth

You may ask what the accomplishments of this department will mean to the future growth of Townsend. We expect that by 1962 our sales of items developed by this department and by other groups within the company will be increased by $5 million to a total of $12.5 million. You can see they will form an important part of our $30-million sales goal for 1962.

From our point of view, these items will also do more than contribute to our total sales volume. They will provide a means for our customers to produce better products at lower costs—a most important goal.



F. R. Dickenson, President

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Reds Aim to Steal Brussels Show

Russia will spend more than $50-million on exhibits to "show up" the West in the fields of science, technology, and performing arts.

The Brussels World's Fair, scheduled to open in April, will be the biggest international show since the New York World's Fair of 1939-40. This Belgian-sponsored show, built around the theme of "Progress and Man," will be host to 47 countries and seven international organizations.

Apart from its bow to the atomic age, the fair will be the arena for an East-West cultural contest, in which the U.S. may take a bad drubbing from the Russians.

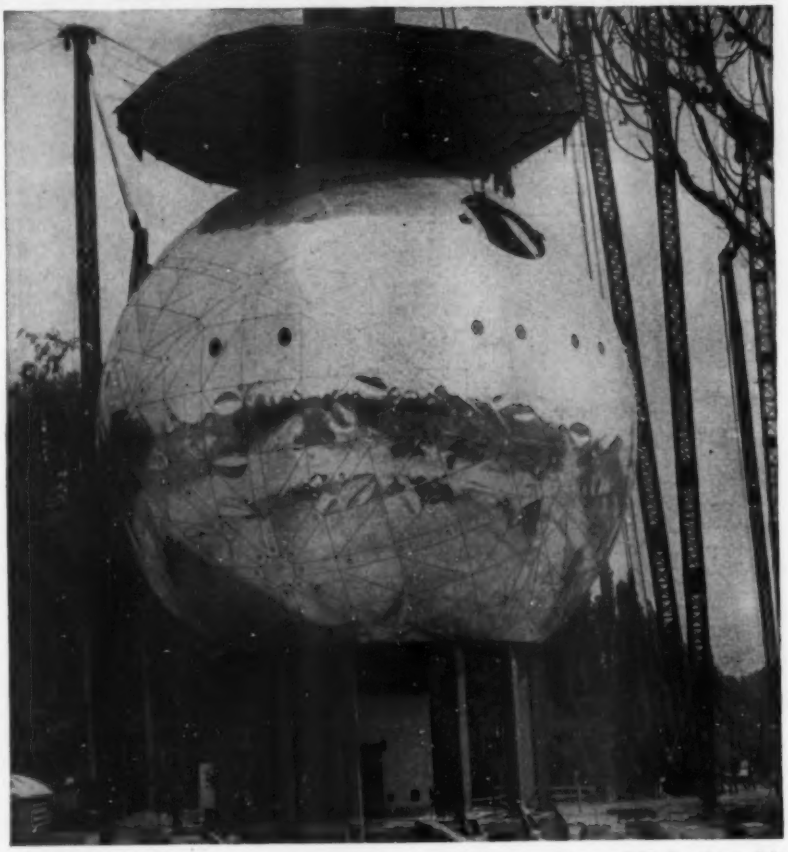
From the start, money problems plus misunderstandings between American industry and the State Dept. seem to have jinxed U.S. participation. As a result, our official exhibit—organized by the State Dept.—probably won't have its best foot forward in the fields of science, technology, and the performing arts. These are the three areas the Russians are stressing most in their obvious effort to "show up" the U.S. and the entire free world.

• **$50-Million Budget**—Armed with a budget of between $50-million and $60-million, the Russians are mobilizing to steal the show. The big West European nations may help carry the ball for the West with exhibits proportionately bigger—in terms of national wealth—than the U.S. exhibit. But even that may not be enough to offset Russia's grandiose effort. The U.S., British, French, and West German budgets lumped together don't add up to much more than half what the Russians will spend.

• **False Start**—A year ago, the State Dept. drafted a $15-million exposition budget for Congress approval. The department figured that this was about enough to build an American pavilion and to stage an effective presentation of life in America. At that point, U.S. companies that asked for space in the pavilion for commercial displays were turned down on the grounds that the Brussels' Fair wasn't to be a trade show.

Then, last June, Congress chopped down the request to $11.8-million. Later, Congress had to tack on another $545,000 to take care of Belgian taxes and to satisfy insurance requirements on the exhibit.

Now, belatedly, the State Dept. is trying to get Congress to restore some of the $3.2-million that was cut—even though at this point the money could be used only to strengthen the U.S. cultural program. Meanwhile, Howard S. Cullman, U.S. Commissioner General appointed to run the program, is scrambling to get what he can from private sources.



ATOMIUM, composed of nine individual spheres (above), will soar 363 ft. above fair grounds. The five lower spheres will house atomic exhibits, the top one a restaurant.

• **No Commercials**—The catch is that the companies that are willing to give still can't get a commercial exhibit into the U.S. pavilion. They have to depend on the State Dept.'s goodwill to get their name in somewhere—either in the official catalogue or a brief mention in connection with the exhibit they helped sponsor.

So far, several hundred companies are reported to have contributed. Ford Motor Co., for example, handed over $200,000 toward a theater in the U.S. pavilion, and a Walt Disney film highlighting scenes from American life. Chemstrand Corp. has agreed to pick up a $45,000 tab for uniforms for American guides at the fair. And American Motors Corp. has lent six autos for use at the fair.

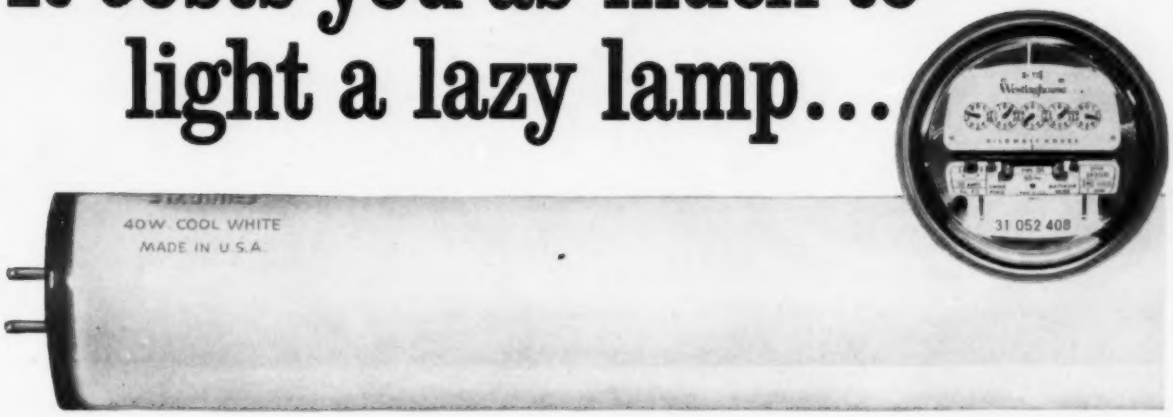
However, other large companies—du Pont for one—turned thumbs down on the grounds that the American exposition wasn't designed in any way for private enterprise.

To date, U.S. officials have scraped together from private industry only about half what they feel is needed. They are trying to raise about $2-million more while there is still time to make effective use of the money.

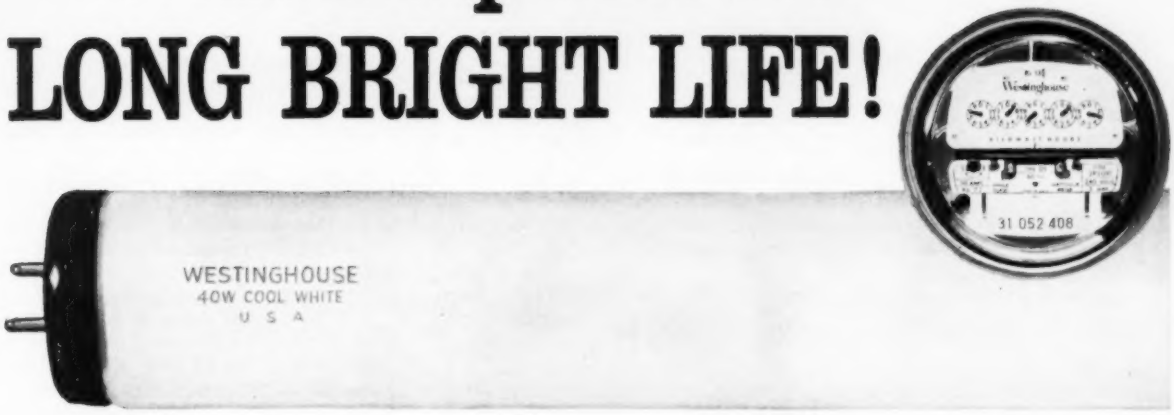
• **Second Strings**—At the same time, other U.S. companies incorporated in Belgium and Britain or doing business in those countries have decided to exhibit in the Belgian and British sections of the fair. Included in this group are Singer Sewing Machine Co., Coca-Cola, Pan-American World Airways, and Convair Div. of General Dynamics. To attract British exhibitors, the Federation of British Industries is building a pavilion for private industries—in addition to the British government pavilion.

Despite the difficulties and the feeling of pessimism on the part of some U.S. onlookers, Commissioner Cullman and his staff are pitching into the job of putting on a first-rate U.S. exposition consistent with the general theme of the fair. But only four of the main U.S. exhibits will focus on technology and science. One will deal with

It costs you as much to light a lazy lamp...



as a Westinghouse with "Ultralume" phosphors ...the lamp with the LONG BRIGHT LIFE!



SOME FLUORESCENT LAMPS get "lazy" fast. They eat up the same amount of electricity, but grow dimmer fast. Only Westinghouse fluorescents stay bright as new . . . longer, because Westinghouse lamps have "Ultralume"™ phosphors!

"ULTRALUME" is an exclusive new Westinghouse phosphor that assures maximum brightness for the life of the lamp! "Ultralume" phosphors give you more light per foot of lamp, yet a Westinghouse costs no more to operate than any ordinary lamp.

ALL Westinghouse fluorescents have "Ultralume" phosphors . . . there's one for every business or home use. Specify Westinghouse on every lamp order. Call your local authorized Westinghouse agent or write—Westinghouse Lamp Division, Bloomfield, New Jersey.

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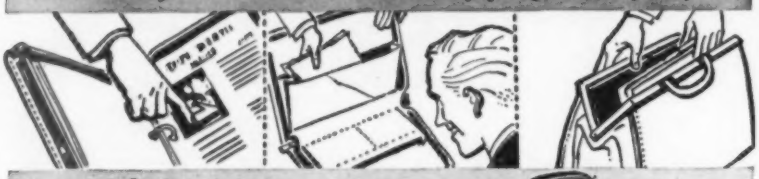

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the International Geophysical Year. A second is on atomic energy. A third is on automation. And a fourth will highlight a color TV studio. On the cultural side, the Philadelphia Philharmonic and the New York Ballet, among others, will give performances.

• **Head Start**—By contrast, Russia appears to have had no major problems in getting its program going. Instead, it publicizes additions to its undertaking. The Soviets, of course, have no trouble in displaying as much of their state industry as they want to bring along—under the guise of man's accomplishments in the Soviet Union.

Culturally, the Russians are fielding an impressive array of art and artistic performances. For one thing, they are booking Brussels theaters for long-run performances by the famed Bolshoi Ballet. For another, they have just announced that they will show Czarist masterpieces—the first time these have been exhibited in the West. Also, they count on artists such as David Oistrakh, violinist, to impress Western visitors.

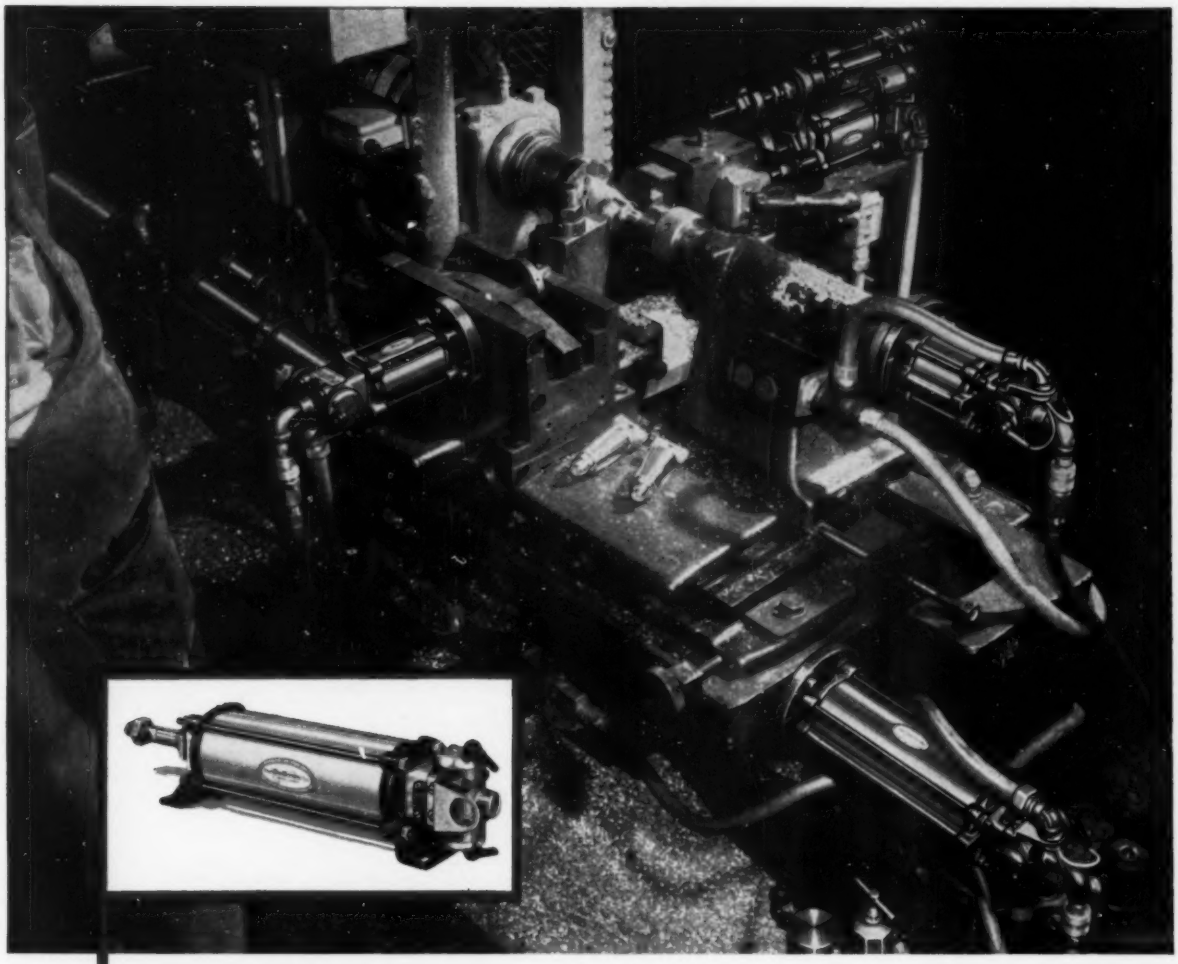
The man who will run the Russians' show is Dimitri Rykov, a technical expert. Rykov is chairman of the Scientific & Technical Society for the manufacture of machine tools in the Soviet Union. He is also chairman of the permanent Soviet-Polish Commission for Scientific & Technological Collaboration.

Rykov's first touch of drama will be to display Russia's new turboprop airliner, the TU-114, at the entrance to the Soviet pavilion.

• **Runners-Up**—Among West European exhibitors, the British are trying for first place. They will spend $9-million for their effort. Already the Board of Trade has made it clear that primary emphasis will go to nuclear and electronic industries in Britain. But there will be plenty of room in the second pavilion for private industries to show British aircraft and cars.

Indications are that West Germany will stick much closer to the U.S. and to the original Belgian theme. This is the doings of Ludwig Erhard, Economics Minister for the Federal Republic. Erhard convinced industrialists that there will be international fairs aplenty, and that they should forgo the Brussels exposition as a means of pushing export. So the Federal Republic will hew to the official line of the fair, with a budget of $5-million.

France is concentrating almost entirely on cultural exhibits depicting French history and civilization. So far, few private companies have even asked government permission to put on a demonstration of French industrial prowess. However, the government will spend $6-million to show what France has done in technical and engineering fields since World War II. **END**



THE BELLOWS AIR MOTOR WITH ITS BUILT-IN ELECTRIC VALVE OFFERS NEW WAYS TO TRIM COSTS IN MANY VARIED OPERATIONS

In every industry you will find this unique air cylinder sparking cost reduction ideas and delivering that cost reduction in hundreds of different ways . . . from packing gardenias to drilling holes; from sorting conveyor traffic to lifting hospital beds; from feeding turrets to spinning rivets. The Bellows Air Motor puts "practical" automation within the reach of every plant.

Here's a typical example:

Hays Mfg. Co., Erie, Pa.: Chief Engineer Henry Schneider working with Frank Moore, Bellows Field Engineer, designed conversion (shown above) of a mechanically driven standard machine for turning tapered brass valve plugs, to a completely automatic air-powered operation. The application of the Bellows units was made in Hays' toolroom. Now, two men at two converted machines turn out more production than was previously obtained from four machines and four operators. Also, the quality of the finish on the plugs produced on the Bellows equipped machines eliminates 50% of the lapping time required by the old machining method.

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Your Bellows Field Engineer (listed in the phone book under The Bellows Co.) will be glad to discuss possible applications with you. Or write The Bellows Co., Dept. BW-158, Akron 3, Ohio, for copies of Bulletins ML-3 and BM-25. In Canada, address Bellows Pneumatic Devices of Canada, Ltd., Toronto 18.

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In Business Abroad

• • •

J. J. Coney Plans Big Projects For Huge Estancia in Argentina

Joseph J. Coney, San Francisco industrialist, has gone one better than King Ranch—with its 980,000 acres in Texas—and purchased a 2.3-million-acre estancia in Argentina's wine-growing province of Mendoza. Though it's a huge ranch, Coney didn't wrench his pocketbook too much—a mere $1 or less per acre. He says he paid cash for the ranch.

Coney already has engaged Carroll Bradberry & Associates, Los Altos, Calif., to survey the Argentine property. Now **he is setting up a syndicate, called Coney Argentina, S.A., to work out a host of projects he is considering for the ranch: mining of iron, lead, silver, copper, and limestone; raising sugar beets, soya beans, alfalfa, cattle, and sheep; and possibly using natural gas under the property for an ammonium sulfate plant to make fertilizer.**

The plan is for Coney Argentina, S.A., to form subsidiaries for each of these projects, then get various U.S. companies to participate. Coney Argentina also expects to draw on local Argentine capital and technical help. Initial investigations of the ranch property may take $2-million and at least a year's time.

Coney, president of Hillcone Steamship Co., first considered buying the ranch—called Rancho Las Piedras de Afilar—about 10 years ago, but Dictator Juan Peron's government wouldn't sell. Now Coney has bought this ranch, plus two adjoining ones.

Buenos Aires reports Coney is dickering with Argentine and U.N. officials to settle some 5,000 Italian and 250 Dutch families on his all-purpose piece of land.

• • •

West Indies Federation Sets Up Shop As World's Newest Nation, Hopes to Grow

Last week 10 British islands in the Caribbean—from Jamaica on the west, to Trinidad, 1,000 mi. to the eastward—became a new nation, the West Indies Federation. The swearing-in of Lord Hailes as Britain's governor general of the federation marked the final step in negotiations for setting up the new nation that began in 1947 at the Montego Bay conference in Jamaica.

The next step on the timetable will be elections for the Parliament in March. **The federation may apply for membership in the U. N. and, in a few years, may ask for commonwealth status, such as Canada has.**

But on the practical level, the new nation has plenty of problems to deal with, among them:

• Ironing out the dispute with the U.S. Navy over using the Navy base at Chaguaramas near Port-of-Spain, Trinidad, as the site for the federation's capital.

• Deciding how to divvy up the woefully short supply of political talent between the individual island governments and the new federal government.

• Trying to come up with some viable scheme to get British Guiana and British Honduras—Britain's mainland Caribbean colonies—into the federation to strengthen its over-all economy.

• • •

British Auto Industry Perks Up With Record 1957 After Meager 1956

Britain's automobile industry made up for 1956's relatively poor showing by setting new records in 1957.

Ford Motor shipped some 23,000 **British Fords** to the U.S. during the year—two and a half times the number shipped here in 1956. **General Motors' Vauxhall,** beginning exports to the U.S. only in August, shipped about 4,500 cars. (GM's Opel plant in West Germany has also been exporting steadily to the U.S. since fall, at the rate of 1,000 cars a month.)

For British-owned companies, the production and export picture was just as bright. **British Motor Corp.** produced 450,000 cars and trucks during the year—a third more than in 1956. It exported 59,000 Austin, Morris, and MG cars to North America.

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Business Abroad Briefs

France's search for oil—already showing marked success in Algeria (BW—Jan.4'58,p62)—is spreading to French Equatorial Africa. SPAEF, a French company, expects to produce 2.8-million bbl. from its coastal concession there this year. Three U.S. companies, including Cyprus Mining Co., are dickering with SPAEF for a 50-50 share in exploring the region.

Appointments: Ake Rusck, 45-year-old head of the Swedish State Power Board, is the **new president of Scandinavian Airlines System** (SAS). . . . Dennis J. O'Connell is heading up **A. O. Smith's Venezuela-based subsidiary,** formed in mid-1957, which will handle all the company's foreign activities including building and managing factories abroad.

Japan looks west: Six Japanese producers of three-wheeled trucks have signed an agreement with Communist China guaranteeing free repairs on new trucks for a period of four months or up to 6,250 miles of driving. Peiping has bought nearly 2,000 three-wheelers from Japan since early 1957. . . . Communist China has sent a feeler to Japan for purchases of 350,000 bbl. of oil monthly—though oil shipments to Red China are banned under the CHINCOM embargo.

Openings overseas: In **Italy,** textile giant Snia Viscosa plans to open a $3-million carding and combing plant near Trieste in early 1959. . . . In **Holland,** Royal Dutch Shell is building a large synthetic rubber plant near Rotterdam with planned output of 50,000 tons, partly for export within the Common Market. . . . In **India,** a $525,000 plant partly owned by Swiss interests is starting production of synthetic gems.

How to RELEASE FLOOR SPACE tied up in steel stocks

For added productivity . . . figure what it *actually* costs you for floor space to carry a sizable steel inventory. Rental or pro-rata charges per square foot, light, heat, maintenance, labor, taxes and insurance . . . these are only *part* of the answer.

For a more realistic look, figure it this way. Can you convert some of your present steel storage areas into productive space . . . add a new heat-treat or machining department . . . save additional investment in high-cost construction?

Get in touch with the representative of your nearby Steel Service Center. Discuss the advantages of drawing on *his* large, diversified steel stocks . . . using *his* efficient cutting and handling equipment. He can often help cut your "Cost of Possession" on steel inventories . . . help you make *more productive use* of your expensive floor space tied up in steel stocks. American Steel Warehouse Association, Inc., 540 Terminal Tower, Cleveland 13, Ohio.

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INTERNATIONAL OUTLOOK

BUSINESS WEEK

JAN. 11, 1958

The U. S. and Western Europe are getting together on the question of negotiating with Moscow. The compromise fits the general formula reached at the NATO summit meeting—push Western defenses but negotiate if the Soviets are willing to talk business.

Secy. of State Dulles has softened his approach somewhat. If Moscow is ready to end its boycott of the United Nations disarmament committee, Dulles would be ready to discuss an agenda for an East-West conference, at least at the foreign ministers level.

Meanwhile, Washington is quite ready to have London and Bonn carry on secret diplomatic talks with the Russians—on the related problems of German unification and a nuclear free zone in Central Europe.

—•—

East-West economic competition has become really hot—and is getting hotter—in the underdeveloped areas of the world.

The State Dept. makes no bones about this in a report just issued on the Soviet bloc's $1.5-billion in existing economic commitments. There is talk inside the Eisenhower Administration about reducing the interest (now 3% to 4%) on loans made by the new Development Loan Fund.

A close look at Soviet activities indicates that Moscow is grabbing the initiative from the U. S. From now on the Soviet bloc intends to put from $500-million to $600-million a year into low-interest (2% to 2½%) credits and loans. (Moscow makes very few grants.)

Here's an over-all view of Soviet economic penetration.

• In the past two years, **Moscow has won a dominant position in three strategically located countries**—Syria, Egypt, and Afghanistan. The Russians are making Syria their base for extending control in the Middle East. Cairo has become their operational center for the penetration of Africa. (To gain this position in Cairo, the Soviets have promised Pres. Nasser to underwrite 25% of Egypt's five-year industrial development plan.)

• **Right now Moscow is pushing hard in border regions between the Communist and free worlds**—in Sudan, Iran, Ceylon, and Indonesia. Even in South America, the Russians are holding out tempting aid offers. Only in India does the Soviet push seem to have eased off.

—•—

With production and trade slowing down in the free world, some sour notes are creeping into economic relations between Western Europe and the U. S. On the one hand, some European exporters plan to cut their prices sharply in the American market. On the other, European economists are wondering whether Western Europe shouldn't soon raise its barriers against U. S. goods.

For several years, European producers of both industrial goods and consumer items have had considerable success in U. S. markets. Now many European companies are finding their U. S. orders for industrial products falling off—in some cases by as much as 30% to 40%. The companies hardest hit are thinking of selling to American customers at cost. **If that happens on any wide scale, it is bound to rouse more protectionist sentiment here**—and hurt the Administration's chances of getting its trade program through Congress.

Some of Europe's top economists have been looking at the other side of the trade problem. They believe that most free world countries, apart

from the U. S. and West Germany, must soon go to restrictive policies on imports to safeguard their exchange reserves. The result, they say, probably would be a decline in European production. In that case, they argue, the countries of Western Europe will have to agree to: (1) extend credit freely to each other; and (2) tighten up again on dollar imports.

—•—

A world trade slump—if it develops—would pose special problems for the six-nation European Common Market, which was launched this week along with Euratom. This regional trade scheme could blow up at the start if unemployment should rise and members are forced to raise, instead of lower, trade barriers within the group.

—•—

France will get assistance from the International Monetary Fund and the Export-Import Bank. This is meant to tide Paris over its payments crisis. Jean Monnet, France's leading "European," is in Washington this week working out the details with IMF and U. S. officials.

The IMF will extend standby credits up to $260-million equal to half of France's quota in the fund. (France drew down the first half during the Suez crisis.) In addition, Ex-Im is likely to permit Paris to stretch out repayment on some of its loans.

—•—

Britain's new Chancellor of the Exchequer, Derick Heathcoat Amory, (page 27) will have his hands full keeping sterling strong.

First, he will have to prove that he is not backing down on the anti-inflation program of Peter Thorneycroft, who resigned as Chancellor this week after differences with Prime Minister Macmillan. Then, Heathcoat Amory must try to prevent a dollar deficit that would drain London's gold reserves. Britain itself should show a pretty healthy dollar surplus this year on current accounts. But the rest of the sterling area is likely to run a heavy deficit, which might wipe out the surplus.

—•—

In Venezuela, the air force revolt against Dictator Perez Jimenez—though abortive—has given U. S. businessmen the jitters.

Another try for a military coup is entirely possible. Young air force officers—many trained in the U. S.—want a more liberal government. The Catholic Church is openly criticizing Perez Jimenez' failure to give workers and farmers a bigger share of the country's oil riches.

U. S. businessmen fear a popular uprising far more than a new military coup. If a military junta were to bid for popular support and consolidate Venezuela's now-disorganized political parties, then foreign interests might be a target.

Argentina is sending a trade mission to Moscow and other East European capitals. This is a followup to the Soviet Union's vague post-Sputnik offers of economic aid to Latin America.

The Argentine government says it hopes to use its $30-million trade surplus with the Communist bloc to buy oil and coal equipment. It also wants a long-term loan of equal amount. But most observers see the Argentine mission primarily as a move to pressure Washington.

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* JANUARY, 1958 *

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This corporate rearrangement has been carried out with the objective of improving the efficiency of our customer service through closer correlation of production and research among the Engelhard Industries. * * *

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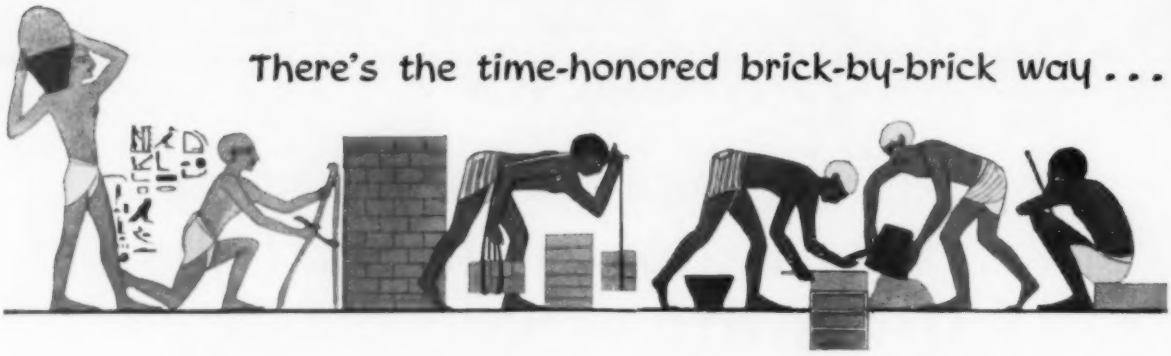

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In Washington

• • •

FPC Staff Changes in Designs May Boost Cost of Niagara Project

The New York State Power Authority, impatient to proceed with its $600-million Niagara River hydroelectric development, faces the prospect that the project will cost more than expected and be further delayed. The Federal Power Commission staff has recommended changes in the plans that would cost $17.5-million additional.

The FPC staff recommendation came as final briefs were filed this week by the various parties involved, preparatory to the full commission's action on the license application of the power authority.

The power authority this week disagreed sharply with the FPC staff's findings on a whole series of grounds: (1) that such designs were not discussed during the FPC hearing; (2) that cost estimates are wrong; and (3) that such a design would boost cost of the project by requiring other changes, which would boost the cost of the power.

The design changes deal with a diversionary canal that would turn water from the river into a storage reservoir. The authority had proposed partially covered canals, but the towns of Lewiston and Niagara had pressed for tunnels. The FPC staff has recommended that the canals be covered for the entire distance. If the changes are accepted by the full FPC, the power authority has until July 1 to come up with acceptable designs.

• • •

Merger of BLS Construction Figures Builds Hope for More Accurate Statistics

Commerce Dept. officials say they've won out over the Labor Dept. in the years-long battle over construction statistics. Timing of the Commerce Dept.'s takeover of Bureau of Labor Statistics construction figures isn't sure, but should come sometime soon.

The top-level decision has been agreed to by Commerce Secy. Weeks, Labor Secy. Mitchell, and Budget Director Brundage.

The idea has long been pushed by the Commerce Dept., which recently moved to set up a separate office of construction statistics in the Business & Defense Services Administration. **The main series to be moved from BLS are: housing starts, estimates of housing expenditures, federal construction figures, and a monthly series on building permits.**

Estimating, analysis, publication, and programing of construction figures will be done by Commerce officials. The Census Bureau will continue to do the actual data collecting.

Commerce officials hope that a single agency will make it possible to get more funds from Congress to improve the figures. Government and industry economists have long agreed that the key construction segment of the economy is covered by one of the weakest sets of statistics. The hope is that it will now be less easy for congressmen in charge of money to pretend they're confused, to play one agency off against the other.

The decision to merge the BLS operation into Commerce was made after the budget document was closed out. Hence, the requests that go to Congress next week won't show a combined operation.

Right now, the guessing is that the merger will be made effective through a Presidential reorganization plan. This means it would take effect within 60 days, unless a majority of one house votes against it.

• • •

High Court Turns Down Exemption Of Cities Service From SEC Rule

Cities Service Co. is still under Securities & Exchange Commission jurisdiction after carrying a legal fight all the way to the Supreme Court. This week, the court declined to review a lower court decision that last summer upheld SEC's claim to authority to regulate Cities Service under the Public Utilities Holding Company Act.

SEC said the company had technically qualified for exemption from the act by having disposed of all its domestic utilities, but the commission argued that it would not be in the public interest to grant exemption.

The reason: Public stockholders own a 48% interest in a Cities Service producing subsidiary (Arkansas Fuel Corp.), which creates a possible conflict of interest. SEC reasoned that Cities Service could use its 52% control to freeze out the minority interest by, for example, giving business to other Cities Service subsidiaries.

If the company wants to win exemption from regulation under the Holding Company Act, it apparently will have to buy up the outstanding minority interest in Arkansas Fuel Corp. or else sell off its own interest.

• • •

Advisory Council of Oilmen Faces Revamping for Antitrust

Antitrusters have convinced Interior Secy. Fred Seaton that the National Petroleum Council, a group of more than 100 prominent oilmen who advise his department, cannot be allowed to continue except under Justice Dept. rules. These rules, guarding against antitrust violations, require a government chairman and government decision as to what's on the agenda.

NPC has been running since soon after World War II with oil executives as chairmen. **Oilmen have regarded membership as a high honor, but they say the council will dissolve if Justice Dept. rules are applied to it.**

Rep. Emanuel Celler, chairman of the House Anti-Monopoly subcommittee, has long been questioning whether NPC, as it is now constituted, escapes antitrust strictures. The Justice Dept. has lent a sympathetic ear. Now Secy. Seaton has tentatively notified NPC that it must conform.

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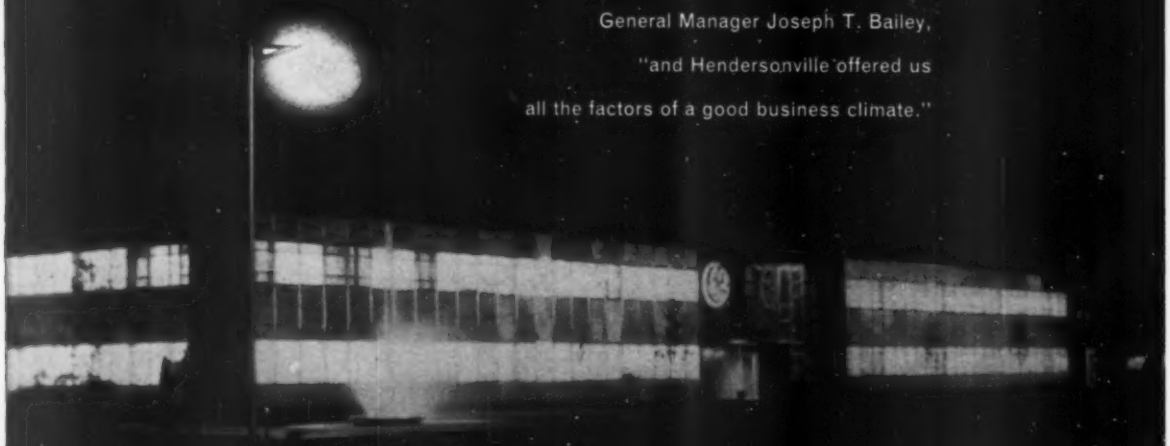
"the outdoor lighting center of the world"

At its quarter-million square-foot plant in Hendersonville, North Carolina, General Electric manufactures outdoor lighting equipment for world-wide distribution. "We needed a location close to raw materials and the lighting market," says General Manager Joseph T. Bailey, "and Hendersonville offered us all the factors of a good business climate."



General Electric's outdoor lighting equipment center is one of the many new plants thriving in North Carolina under the good business climate encouraged by Business Man Governor Luther H. Hodges.

For more information about North Carolina, communicate with Wm. P. Saunders, Director, Department of Conservation and Development, Raleigh 4, North Carolina.

LABOR

It Looks Like a Stormier 1958

● In a tenser economy, 1957's relative peace is likely to give way to tough bargaining and strike threats.

● A total of 1.6-million unionists are set to demand new gains—while management tries to hold down costs.

● A lot depends on how far UAW thinks it's safe to push—and what it can get from a resistant management.

Industry enjoyed its most peaceful postwar year in 1957, as deferred wage increases in long-term contracts kept down bargaining pressures. Fewer workers were idled by strikes, and less time was lost, than in any year since World War II.

This year could be different. Although 4-million workers are still under major contracts that are closed to bargaining in 1958, a potentially troublesome 1.6-million others can—and will—go after further contract gains this year. The table on pages 110-111 shows how the calendar of their key bargaining dates runs through the year. Spotted there in color are some of the crucial dates that will decide just how rough a year 1958 will be.

• **More Strikes?**—The crucial million and a half workers can mean the difference between a peaceful 1957 and a tense 1958, characterized by tough negotiating on the part of labor and management, and by strikes and threats of strikes.

Last year, the number of new walkouts dropped to 3,600 involving a postwar low of 1.4-million workers and an estimated 16-million man-days of idleness. Nobody expects 1958 to equal that record.

During the next 12 months, new contracts must be negotiated in auto, aircraft, and agricultural equipment industries. The United Auto Workers and the International Assn. of Machinists will demand costly gains. Employers, more concerned over the trend of the economy than in any recent year, will resist.

Trouble could be brewing in electrical manufacturing, too. The International Union of Electrical Workers has fall reopenings on employment security in contracts with Westinghouse Electric Corp. and General Electric Co. There are differences of opinion between management and labor about what "employment security" includes. IUE's Pres. James B. Carey is talking about demands for a shorter work week. Such a proposal is sure to be strongly resisted.

There are other potential trouble areas in 1958 bargaining. Contracts expire in apparel and textile industries, on the East Coast and West Coast docks, and in chemical, communications, and glass industries.

• **Lines Taut**—With management and labor lines drawn taut, the stormiest contract fights in years could occur in major sectors of industry. Realists in Washington, including Labor Secy. James P. Mitchell and Joseph F. Finnegan, director of the Federal Mediation & Conciliation Service, are conscious of such a possibility. Government mediators have been alerted.

In effect, what is ahead is a clash of economic philosophies:

• Management contends that union insistence on costly settlements in 1958 might accelerate the current business downturn, deepening and prolonging it in such a way that "the entire economy would suffer, labor most severely of all."

• Labor, on the other hand, insists that "sizable" wage increases and a shorter work week must be negotiated to "bolster consumer buying power and thereby provide a needed stimulation for an upturn" (BW—Dec.28'57,p86).

• **Pay Going Up**—No matter what happens at the bargaining tables, wages are going still higher in 1958—probably 7¢ to 11¢ more for many employers.

Under long-term contracts negotiated in 1957 or earlier, 4-million workers are assured raises this year ranging from about 5¢ to 25¢ an hour. Most of the increases will be 7¢ or more; only one-fourth of those under extended wage pacts will get less.

According to the Bureau of Labor Statistics, the range of most "built-in" raises in manufacturing industries is from 7¢ to 11¢ an hour. The average for trucking, construction, and nonmanufacturing industries is about 15¢.

These raises plus accumulated cost-of-living adjustments will create a strong upward pressure on wages being negotiated this year. The 7¢ to 11¢ increases under long-term agreements form an obvious base from which other unions will bargain. They'll try to get more. It's a good bet they'll strike before accepting less.

But will they press hard for other gains? That is currently one of the most important questions for employers. The shorter work week is a highly touted issue for 1958. So are increases in supplementary unemployment benefit plans, severance pay and job transfer rights, and a variety of "fringe" gains.

• **UAW Is the Key**—Whether they continue to be major demands for unions will depend largely on the United Auto Workers.

Walter Reuther and UAW have been labor's pace-setters for two decades. Now, for the first time since the 1930s, they are caught in the middle of really hard bargaining pressures. Reuther could be "the whipping boy of 1958" instead of a contract pace-setter.

UAW will wrap up its demands for the new year at a special convention in Detroit Jan. 22-24. There's no doubt that the union's goals for the year will add up to a substantial hourly cost figure—at a time when the auto industry is talking of its "responsibility" to resist further inflationary demands.

But UAW's convention might keep the bargaining program flexible enough to shape it to the economy in the spring, whichever way it goes.

• **Talks in the Spring**—Other unions are almost certain to hold back, to see what UAW goes after—and, more importantly, what it gets from a resistant management. The bulk of labor is concerned over the hard bargaining ahead. It wants the heft and power of the auto union to lead the attack.

When UAW goes to bargaining tables in advance of the May expirations, this will be its problem:

• Unemployment will probably be climbing. Seasonally, it's likely to go up through March, and the economic downturn is pushing it up to levels that may well touch 5-million.

• Work hours and overtime will be down in autos, as elsewhere.

Thus, Reuther must bargain from a weakened economic position at a time when some other major unions are collecting 7¢ to 11¢ deferred raises. Can Reuther get any more?

Some union economists are privately predicting Reuther won't do better on pay than 10¢ an hour and will not break through on a shorter work week. They predict UAW will insist on a one-year contract—at most, no longer than two.

Meanwhile, other unions and employers will have their eyes on the timing of contract expiration dates, as listed on the following pages. ➟

Industry's Key Contract

More expirations may mean more

Industry	Company or Association	Union	Employees	Contract Expires	Wage Reopening	Cost-of-Living Adjustments	Automatic or Deferred Raises
JANUARY							
COAL	Bituminous Mines	Mine Workers	200,000	Any time on 60-day notice			
APPAREL	Dress Mfrs. Assn.	Garment Workers	87,000	Jan. '58			
FEBRUARY							
APPAREL	Men's Clothing Mfrs.	Clothing Workers	125,000	July '60	Feb. '58		
MARCH							
AIRCRAFT	Douglas, California	Machinists	32,000	Mar. '58		Feb., May, Aug., Nov.	
AIRCRAFT	Douglas Aircraft Long Beach, Calif.; Tulsa	Auto Workers	28,000	Mar. '58		Feb., May, Aug., Nov.	
AIRCRAFT	North American Ohio & California	Auto Workers	32,800	Mar. '58		Jan., Apr. July, Oct.	
ELECTRICAL MFG.	Sylvania Electric Co.	Elect. Workers (IUE)		Mar. '58			
FOOD	National Sugar Refining	Packinghouse Workers		Mar. '60			5¢ Mar. '58
CHEMICALS	Dow Chemical Co.	Mine Workers	7,300	Mar. '59		Jan., Apr. July, Oct.	8¢ Mar. '58
APRIL							
TEXTILE	Cotton-Rayon Mills	Textile Workers	55,000	Apr. '58			
TEXTILE	Woolen-Worsted Mills	Textile Workers	35,000	Apr. '58			
CHEMICALS	Lever Bros.	Oil Workers		Apr. '58			
OIL	Goodyear Atomic Co.	Oil Workers		Apr. '60	Apr. '59		9¢ Apr. '58
MAY							
COMMUNICATIONS	Western Union	Telegraphers	30,000	May '58			
MACHINERY	General Motors	Electrical Workers (IUE)	40,000	May '58		Mar., June, Sep., Dec.	
AIRCRAFT	Boeing, Washington	Machinists	23,000	May '58			
PAPER	Intl. Paper Co.'s Southern Kraft Div.	AFL-CIO Unions	12,300	May '58			
GLASS	Glass Container Mfrs.	Bottle Blowers		May '60			2% May '58
AUTO	GM, Ford, Chrysler	Auto Workers	655,000	May '58		Mar., June, Sep., Dec.	
JUNE							
TEXTILE	Carpet Manufacturers	Textile Workers	23,000	June '59	June '58		
OIL	Sinclair Ref. Co.	Oil Workers	10,000	June '59	On 60-day notice		
JULY							
FARM EQUIPMENT	Caterpillar & Harvester	Auto Workers	58,000	July '58		Mar., June, Sep., Dec.	
TRUCKING	Long Haul Truckers (New York)	Teamsters	7,000	July '58			
LUMBER	Southern California Companies	Carpenters	10,000	June '59			10¢ July '58

and Wage Dates for 1958

union trouble in year ahead

Industry	Company or Association	Union	Employees	Contract Expires	Wage Reopening	Cost-of-Living Adjustments	Automatic or Deferred Raises
JULY (contd.)							
STEEL	Steel Industry	Steelworkers	500,000	June '59		Jan., July	7¢-13¢ July '58
NONFERROUS	Anaconda & Kennecott	Mine-Mill	18,600	June '59			About 7¢ July '58
FOOD	Kellogg Co.	Grain Millers	4,200	July '58			7¢-9¢ July '58
AUGUST							
FARM EQUIPMENT	Allis-Chalmers Mfg. Co.	Auto Workers	9,000	Aug. '58		Mar., June, Sep., Dec.	
AIRCRAFT	Bendix Aviation	Auto Workers	16,000	Aug. '58		Mar., June, Sep., Dec.	
ALUMINUM	Aluminum Co. of America	Steelworkers	17,400	Jul. '59		Feb., Aug.	7¢ plus Aug. '58
MARITIME	Pacific Maritime	ILWU Longshoremen		Aug. '58			
MARITIME	N. Y. Shipping Assn.	ILA Longshoremen		Aug. '58			
MACHINERY	Timken Roller Bearing	Steelworkers	10,000	Aug. '59		Feb., Aug.	9¢ Aug. '58
SEPTEMBER							
GLASS	Pittsburgh Plate & Libbey-Owens-Ford	Glass Workers	22,000	Sep. '58			
MEAT PACKING	Armour & Swift	Packinghouse	45,000	Aug. '59		Jan., July	7½¢ Sept. '58
METALS	Calif. Metal Trades	Machinists	8,000	May '59		July '58	11¢ Sep. '58
MACHINERY	Am. Car & Foundry	Machinists		Sep. '59	Sep. '58		
GLASS	Glass Container Mfrs.	Flint Glass	2,000	Sep. '59	Sep. '58 if C-of-L rises 3½%		2% Sep. '58
ELECTRICAL MFG.	Western Electric	Communications		Sep. '59	Sep. '58		
OCTOBER							
TEXTILE	Dyers & Finishers, N. Y., N. J. & New England	Textile Workers	24,000	Oct. '58			
CONTAINER	Continental Can & American Can Co.	Steelworkers	37,000	June & Sep. '59		Apr., Oct.	7¢ Oct. 1, '58
ELECTRICAL MFG.	Westinghouse Elect.	(IUE) Elect. Workers	55,000	Oct. '60	Employment Security Oct. 15	Mar., June, Sep., Dec.	3.5% (5¢-10¢ max.) Oct. 14
ELECTRICAL MFG.	General Electric	(IUE) Elect. Workers	83,000	Oct. '60	Employment Security Oct. 15	Feb., May, Aug., Nov.	3.48% (4½¢ min.) Sep. 15
ELECTRICAL MFG.	Stewart-Warner	(IBEW) Elect. Workers	5,000	Oct. '62	Every October		
METAL PRODUCTS	Yale & Towne	Machinists	2,000	Oct. '59			10¢ Oct. '58
ELECTRICAL MFG.	Raytheon Mfg.	(IBEW) Elect. Workers	13,200	Oct. '58			
NOVEMBER							
TRANSPORTATION	Class 1 railroads	Trainmen & Nonop. Unions	850,000	Nov. '59		May, Nov.	7¢ Nov. '58
TOBACCO	Am. Tobacco Co.	Tobacco Workers		Nov. '59			7¢ Nov. '58

Data: Bureau of Labor Statistics.

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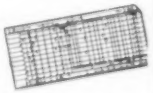
This is the purpose of a system we installed at Schlegel Manufacturing Co., industrial textile producers of Rochester, N. Y.

The installation comprises 3 elements: telephones spotted at strategic plant locations; loudspeakers similarly placed; and two Control Centers, each with 2 control turrets to "master" 90 lines and racks for holding individual employee performance cards.



At the start of a new job—the worker phones Control and his time clock number and operation number are recorded on punched cards. Any change—completion of job, interruption for repair—is similarly phoned in.

The Control operator may also use the paging facilities to locate personnel, to send maintenance crews to a "down" machine, for announcements or emergency instructions, and to expedite movement of raw materials to the looms. In fact, the Control Center actually acts as a Production Control Center. At night, when the turrets are unattended, any telephone in the plant may be used to *page* throughout the whole building.

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AFL-CIO Test

Walkout at Montgomery Ward may show how effective is AFL-CIO support in absence of Teamster aid.

Union clerks struck at a number of Montgomery Ward & Co. retail stores this week in a dispute that could test the effectiveness of AFL-CIO economic sanctions as a strike weapon.

After months of bargaining on a new contract, the Retail Clerks' International Assn. struck Monday against "selected" Montgomery Ward stores. Initially, union clerks walked out in Kansas City, Kan., Fulton, N. Y., and Whittier, Calif. All three stores were still open on Wednesday—manned, according to the company, by staffs ranging from a third to three-quarters of their regular employees. The company said sales hadn't been affected.

Altogether, the RCIA claims bargaining rights at 62 stores in 20 states and Alaska, employing 4,000 persons. Montgomery Ward recognizes the union at 53 of the 62 stores; representation elections are pending at eight, and clerks rejected RCIA in a poll last May at a ninth.

In all, Montgomery Ward stores employ 35,000. Including its mail order operations, its employment tops 57,000.

• **Rivalry**—RCIA has tried off and on for years to extend its membership through the store chain. It has made little headway. However, the International Brotherhood of Teamsters has made significant gains in recent years after negotiating a "maintenance of membership" contract with the company in June, 1956, covering 14,000 mail order workers and 3,000 in retail stores. RCIA and Teamster rivalry was hot and angry at the time, although both were then in AFL-CIO. Now with the IBT out of the federation, RCIA faces even more serious problems with the Teamsters—an important factor in the success or failure of any retail strike.

• **Strike History**—The clerks entered negotiations with Montgomery Ward on new contracts last June. RCIA insisted on "uniform" agreements for all stores, to include a 20¢ raise, an increase in commissions, overtime pay after 40 hours a week, and a modified union-shop clause similar to that in IBT contracts. Later, the union cut its wage demand to 10¢. It protested—as it had in 1956—that the company refused to bargain with it in good faith.

Montgomery Ward counter-charged RCIA with bad faith for "attempting to negotiate for all stores involved as one multiple store bargaining unit." It argued that economic and competitive

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✶ Ideas for design engineers

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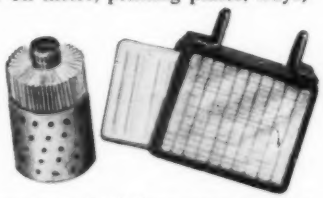

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TECHNICAL PAPERS FOR INDUSTRY

conditions are different in each local area where the company has stores. The company offered to bargain at any time "on a local basis where local conditions can best be appraised and where both the store manager and the immediate union representative of the employees can participate in the bargaining."

In a subsequent RCIA-company exchange:

• The union accepted an arbitration proposal by the Federal Mediation & Conciliation Service, but the company rejected the suggestion.

• Montgomery Ward filed unfair labor practice charges against 62 RCIA locals in 13 National Labor Relations Board regional offices.

Contracts of clerks' locals at 59 stores ran out last Sept. 15. Although RCIA threatened walkouts, it delayed action until after the first of the year. Then it announced a "piecemeal" strike against the company, backed by "informational picketing" at Montgomery Ward units across the country.

• **AFL-CIO Help**—The weakness of the union in Montgomery Ward is its lack of more extensive and powerful representation—and, importantly, the lack of truckers' support that could shut off deliveries to the company's stores.

In an effort to offset this, AFL-CIO has gone to almost unprecedented lengths to back up the bargaining and strike action of an international union.

When negotiations reached an impasse last fall, AFL-CIO Pres. George Meany named two federation vice-presidents, Joseph Keenan of the International Brotherhood of Electrical Workers and James B. Carey of the International Union of Electrical Workers, to assist RCIA at the Montgomery Ward bargaining table, as representatives of AFL-CIO.

Last month, the federation's biennial convention authorized "full support" of the clerks' strike, made necessary, according to AFL-CIO, "by the company's failure to bargain realistically with the union." With an obliquely worded reference to Montgomery Ward's relations with the Teamsters, the federation said that employers now have "a moral obligation as well as a legal one" to deal with "clean and democratic trade unions." Otherwise, AFL-CIO said in a Montgomery Ward strike resolution, "business corporations must be held responsible for encouraging corruptly dominated unions, one of the worst forms of anti-unionism."

The federation pledged that its full force of 13.5-million unionists would join in a nationwide crusade against Montgomery Ward. No specific mention was made of a boycott, perhaps because of the attention now being given on Capitol Hill to criticism of labor's boycott tactics. But, to laborites, the implication was clear. **END**

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If you need further proof, let us send you the names of a representative list of our distributors. Check with them on their present success and future prospects.

As growth potential is great, we can consider only correspondingly successful businessmen. Technical knowledge in field of general contracting advantageous but not essential as standardization simplifies the pool construction. Annual service contracts provide continuing income.

We will appoint distributors in open areas at once as the first sign of Spring will heighten consumer demand. (Dealerships also available.) Write today outlining your qualifications. Address President, International Swimming Pool Corp., 144 East Post Road, White Plains, New York.

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Today, Southside Virginia gold is a blend of unusual competitive advantages for your plant. Industries here have nearly doubled in two decades. Yet you can still draw on large reserves of man and woman power to help you profit by this area's forest and mineral resources, and nearby supplies of coal and other raw materials.

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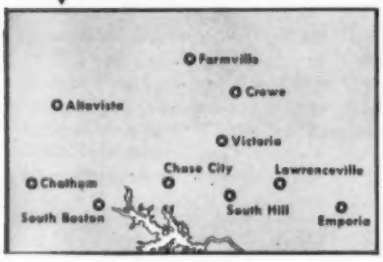

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Clark P. Spellman, Director—Area Development, Electric Building, Richmond 9, Virginia • Phone: MIlton 9-1411

In Labor

• • •

High Initiation Fee, Union Shop Are Incompatible, NLRB Aide Rules

A local that has a union shop contract with an employer shouldn't be allowed to put into effect an "excessive and discriminatory" increase in its initiation fee, a National Labor Relations Board trial examiner has ruled.

A Hollywood local of Motion Picture Screen Cartoonists boosted its initiation fee from $50 to $250 in 1956. The Animated Film Producers' Assn., comprising five companies with union shop contracts with the local, protested to the NLRB. **They charged the union with exacting a fee disproportionate to wages in order to shut out newcomers.**

A board trial examiner upheld this view. He recommended that the local be required to reduce the initiation fee to a "reasonable" figure and refund all excess payments by new members, or surrender its union shop clause. **The trial examiner ruled that the high fee and compulsory unionism clause are incompatible because they make the local "in practical effect a 'closed union.'"**

• • •

Longren Revamps Work Calendar Adding Long (and Short) Weekends

Longren Aircraft Co., Inc., Torrance, Calif., a defense subcontractor, wished its 498 employees Happy New Year with a calendar announcing 12 long weekends in 1958. **The year's work schedule will give employees eight three-day weekends and four four-day weekends.**

Longren employees will have the first Monday of every month off, but will work the following Saturday. Four weekends will be extended to four days by being combined with legal holidays.

• • •

Laid Off in Steel, Workers Find Jobs In Autos, Thanks to Union Cooperation

About 275 steelworkers laid off at Bethlehem Steel Co.'s Lackawanna plant in Buffalo have been "farmed out" to temporary jobs at Chevrolet plants nearby. To do so, the members of the United Steelworkers switched, for the duration of the layoffs, to the United Auto Workers.

The cooperation between USW and UAW isn't new in the Buffalo area, but it has never been on so broad a basis. Under the plan—now being extended by USW to other sections of the country—**a worker laid off at the Bethlehem plant applies at Chevrolet for a temporary job. If he can be used, he requests a transfer card from USW to UAW.**

He pays no initiation fee to the auto union and loses no benefits accrued to him as a member of the steel union. The only difference is in dues payments—to UAW instead of USW. When he is recalled, he only has to notify the two unions, and he is a USW member in good standing again.

The plan has obvious benefits to laid-off workers: their pay loss is held to a minimum. It's a boon for Bethlehem, too: those who transfer aren't a drain on the steel company's supplementary unemployment benefits reserves. And Chevrolet is able to pick up workers needed while it operates full-scale on new models.

Not all who are laid off at the Bethlehem plant transfer to Chevrolet jobs; only about one in four can be used.

• • •

Court Bars Reprisals by Union Against Non-Strikers, Returnees

Union reprisals against 2,800 members who did not support a strike against Republic Aviation Corp. of Long Island were permanently barred last week by the New York State Supreme Court.

Lodge 1987 of the International Assn. of Machinists struck against Republic for 16 weeks in 1956. In settling on a new two-year contract, the parties stipulated that there would be no reprisals against those involved in any way in the long walkout.

Despite that, the union shortly afterward ordered a trial for unionists who did not strike or who returned to work before the settlement was reached.

Republic went to court. It alleged that retaliatory trials by the union would breach the contract and hamper Republic's fulfillment of government contracts. The court agreed.

• • •

New York Subway Pact Is Signed, But the Discontent Lingers on

A two-year contract negotiated within hours of a strike deadline kept New York City's subways and buses running into the New Year. Officials who had worried over the possibility of a crippling tieup breathed easier, hoping for transit peace extending through 1959.

But trouble may not be over for them, despite a 32½¢-an-hour "package" settlement with Michael J. Quill's Transport Workers Union. The basic discontent of the crafts over representation by TWU is still strong.

Shortly after the TWU signed for a 15¢ raise now and 10¢ more next Jan. 1, plus assorted "fringe" gains, **the Motormen's Benevolent Assn. announced plans to challenge the contract in court.** The MBA, which struck New York's subways last month (BW—Dec.21'57,p106), questioned the right of the New York Transit Authority and TWU to sign a contract before the state legislature has time to act on a bill guaranteeing craft unionists the right to seek representation by craft units.

The Transit Authority now refuses to deal with "splinter" unions; it negotiates only with the TWU, designated as TA bargaining agent in an election in which only one-third of the workers voted for Quill's union.

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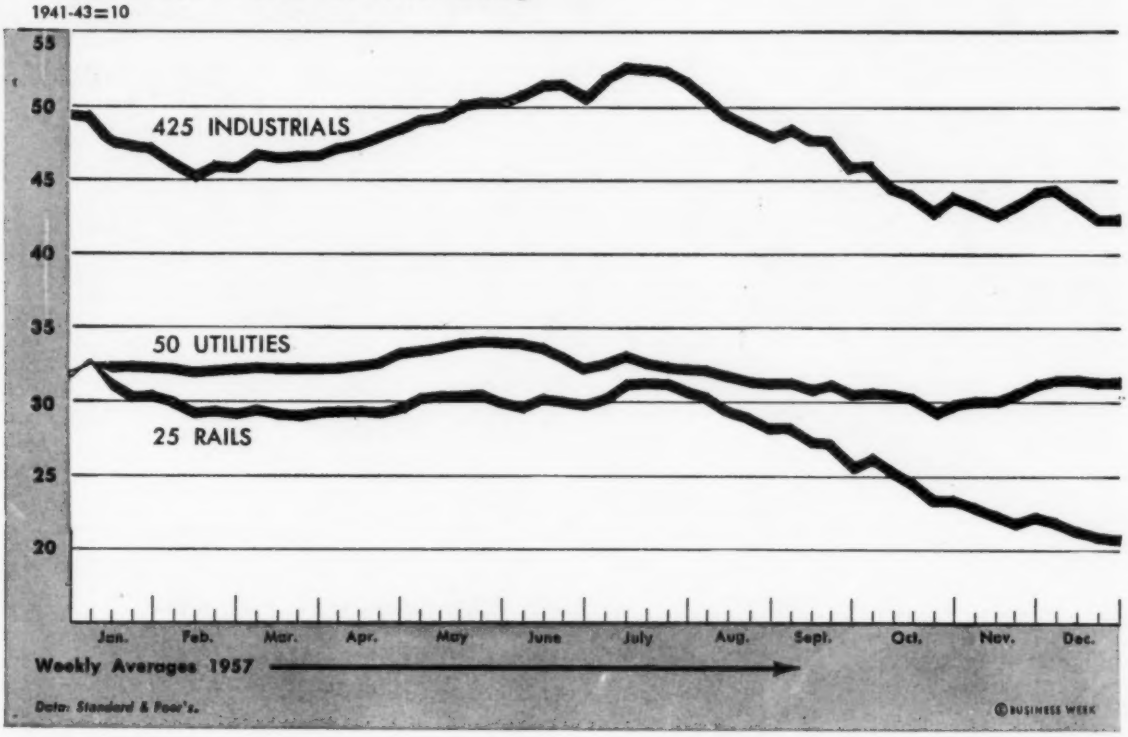
1957—The Year of the Drop



Is There Hope for 1958 Profits?

Barring general downward march, investment men see a good chance of market gains for wary buyers; they don't look for a new bull market, but think it's possible to pick stocks that will advance even in a recession.

The early part of the year is normally a time for making investment decisions. This week was proving no exception, with Wall Street trying to give potential investors some notion of what 1958 would bring. Although many investment men seemed unsure about the future, some were definitely saying that, barring another decline such as the market experienced in 1957, the opportunity for profits is bright.

This should come as good news to most investors. The performance of the market in 1957 clearly anticipated the sea-change now evident in economic conditions. As the chart above indicates, the three major sectors of the market—industrials, utilities, and rails—moved up during the first half. Then, before the economy itself turned down, the market started sliding. By the time the recession became apparent, in the fall, the market as a whole had dropped more than 20% from its July high.

Despite the fact that the market was right last year in forecasting the economic downturn, few investors were able to take advantage of this to make a profit. On the contrary, only those who sold out in the first half or sold short in the second were really ahead. The majority who stayed put in their investments took a beating.

Investors who remain "frozen in" only benefit in a full-fledged bull market of the 1953-1957 variety. Even then, a lot of stocks started declining long before the market as a whole turned down (BW—Dec.14'57,p154).

• **Basis for 1958 Profit**—Those who claim that 1958 can be profitable for the investor are not counting on a new bull market. They think that such a development is as unlikely as an all-out bear market. What they are betting on is that the market will not go to extremes in 1958.

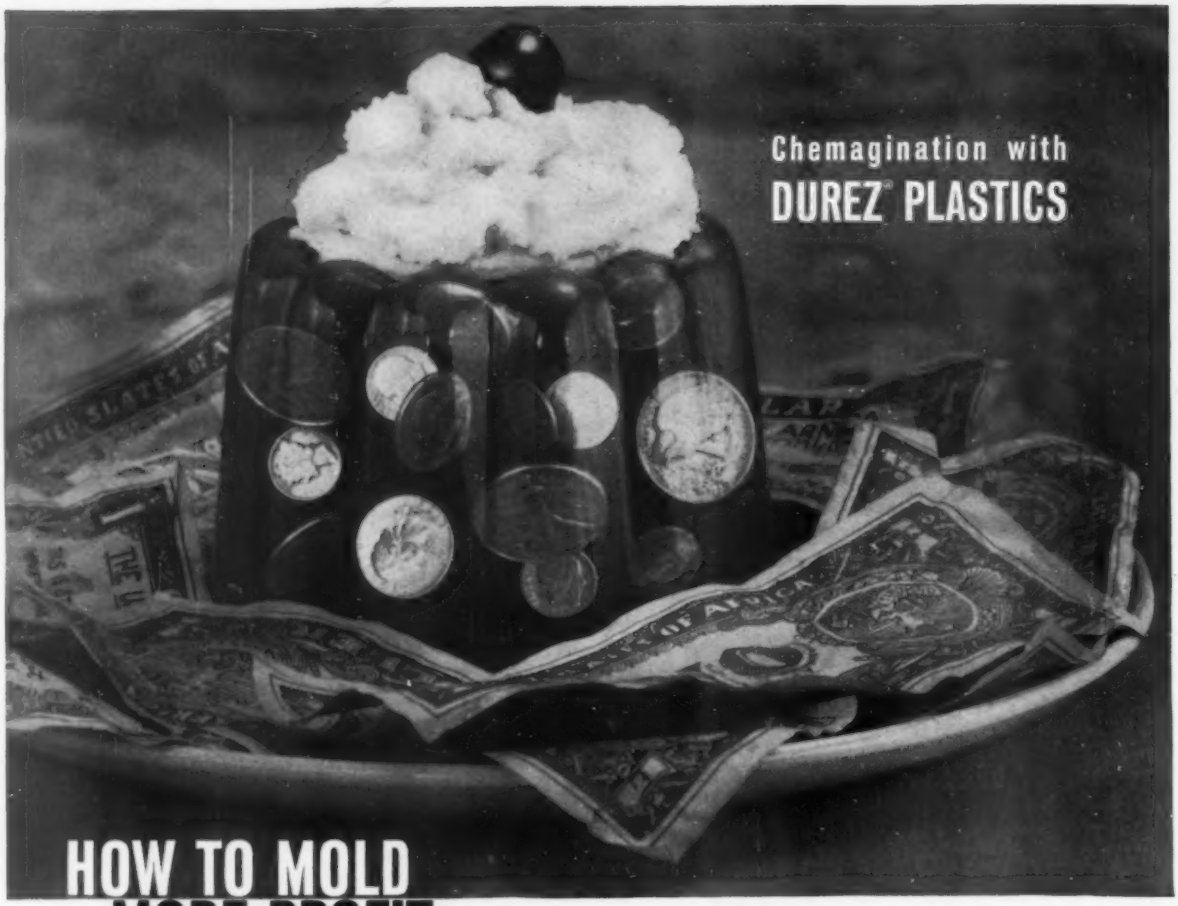
Investors who stay completely frozen in will not profit. Nor will those who just pick a selection of depressed stocks. And it is not a case of picking special situations—stocks that will go up for purely internal reasons such as a reorganization.

Investment men who see profits available in 1958 are basing their viewpoint on the economic outlook. They feel that the economy is in for a recession, but not a depression. And they say that the secret of profits in the 1958 market is in choosing stocks that perform well in a recession period.

This does not mean investing in the popular defensive issues. Defensive stocks traditionally do better than the averages in a market decline, but rarely show handsome gains. They feature price resistance rather than ability to swim upstream against the current.

But there are stocks that do advance in price in a recession. A good number go up even if the market averages decline. It is only if the economy—and the market—go into a tailspin that holding such stocks is dangerous. And investment analysts point out that if a major bear market shapes up, then not even the defensive issues are good buys.

• **Pathfinders**—One investment man who takes the view that profits are possible in 1958 is Anthony Gaubis, head of Anthony Gaubis & Co., an invest-



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ment counseling firm. It's his view that though the market averages may decline below the lows registered in 1957, a number of stocks have already hit bottom and will continue up.

Another experienced observer, Thurston P. Blodgett, vice-president of Tri-Continental Corp., takes much the same view. He feels that the stock market is likely to see the kind of adjustments that are going on in the economy. Barring an all-out decline, he considers that specific stocks and groups will perform far better than the averages.

• **Figuring It Out**—Blodgett thinks that some stocks, particularly growth stocks, may not make a good showing in the next few months because of the likelihood of a worsening in business. And he feels that stocks of companies dealing in capital goods will show little improvement over an even longer period. At the same time, he thinks that stocks of companies in consumer goods industries may rise in price.

One reason, says Blodgett, is that consumer income should stay high during a recession period. Another is that consumer stocks were not among the leaders in the latter stages of the boom. For the most part, they hit their highs early in the bull market and may now be ready for a new upturn.

For example, retail food chain stocks are currently above the low point they hit in 1956; they have managed to start climbing again. Drug stocks are exhibiting a similar pattern.

Blodgett stresses that it is normal to see some stocks rise while the averages fall—if the over-all drop is not a severe one. The same holds true in a market rise; some stocks will fall even though the averages are climbing.

• **Picking the Winners**—The trick in this kind of market is to pick the potential profit makers. One way is to pick the stock groups that have already made their adjustment and show promise of performing well in a recession. The next step is to pick the specific issues that appear to have the potential to outdo the group.

In the past few months, for example, the defense utilities group has been able to withstand most of the selling pressure. But some "growth" utilities have chalked up big gains. Florida Power & Light, located in a growing area, is one that has done much better than the utility average.

• **When to Buy**—Gaubis feels that the smart investor cannot buy with his eyes shut in 1958. He takes the position that the Dow-Jones industrials average, now in the 440-450 range, may drop to the 380-400 range sometime in the first quarter, when 1957's fourth-quarter reports show that "business took a real slide." This would be considerably below the low of 419 that the averages hit in October, but Gaubis still insists that investors can run counter to this trend.

According to his analysis, a declining market normally hits a low point three months after a major change in Federal Reserve policy, then turns up. This was what happened in 1953, and Gaubis thinks it should come true again. On this analysis, the market will hit its low in February and then start rising again.

Gaubis does not think that 1958 will see another bull market. But, like Blodgett, he does expect that a number of stocks will do much better than the averages, and he looks for some to gain at least 50%.

In general, Gaubis agrees that consumer stocks should do better in the coming year. But he also feels that stocks which have had a big reduction in price during the 1957 decline may be in a buying range. "A lot of corporations face big declines in earnings," says Gaubis, "so the emphasis should be on issues which will either show stabilization or a moderate rise in earnings."

Companies that can cut their costs with a slump in business are candidates for better earnings. It's the firms that face mounting costs that should be avoided.

S. L. Stirling of Eastman, Dillon, Union Securities & Co. also feels that "attractive investment opportunities" are present in the current market. It is his view that a lot of growth stocks have declined to a level where they can safely be bought, including some in the capital equipment field—perhaps not for immediate gain, but for the long term.

Other analysts, including Blodgett and Gaubis, seem to suggest that the growth stocks will remain in a buying range for some time to come. In the meantime, they think the big gainers in 1958 will be those stocks that have already touched bottom and are on the way up.

• **Clues in the Economy**—The majority of analysts agree that the market is unlikely to do as well in anticipating the next turn in the economy as it did in 1957. But it is the economy that provides the clues for picking stocks to buy.

This is why they talk of consumer goods stocks. But not all consumer goods stocks look good. For example, most analysts feel that automobile stocks are unlikely to make a good showing, and few are recommending appliance stocks.

As Blodgett sums it up, the most significant question is whether or not industry is likely to see any substantial price cutting. In 1949, and again in 1953, most firms got by without having to make price cuts. If they are able to do so again, Blodgett thinks a lot of issues are worth buying. "We may be seeing too much pessimism, just as we had too much optimism. The shrewd buyer can make profits in the stock market in 1958."

No Rebound . . .

. . . yet for realty securities, but further easing of money could start them moving up again.

Real estate securities, held down by tight money in 1957, show few signs of rebounding now that the credit reins have been loosened. But they may go higher if money eases further.

The real estate stock index compiled by Amott, Baker & Co. dropped 0.7% in December, to a point 4.3% below last year's closing. It was the first time since 1948 that the average of real estate security prices was lower than in the preceding year.

Moreover, the 20-issue real estate bond index of the same Wall Street specialist in realty issues was 6.1% lower than 1956's closing. While the rest of the bond market was recovering smartly since November when the Federal Reserve Board reduced the discount rate, real estate bonds remained weak. At year end, the bond index reflected an average closing price of $877 per $1,000 bond, compared with $934 at the end of 1956.

• **Out of Favor**—Real estate securities and bonds—many of which are sold in the over-the-counter market—have generally been out of favor with the buying public since the 1930s, when investors were burned by the so-called "guaranteed realty issues." These issues, which financed the bulk of real estate projects built from 1925 to 1931, collapsed in the Depression.

However, a small core of professionals and a few mutual funds have continued to make an active market for realty issues. During the 1953-56 bull market, realty stocks moved up—from the end of 1954 to the 1956 closing, Amott, Baker's stock index jumped 30.8%.

The real estate market started sliding as the pinch in money tightened. The volatile hotel stocks, which were also hurt by higher operating costs and a declining occupancy rate, were the most vulnerable. Hilton Hotels Corp. was down $6.75 for the year, closed at $16.12. And Knott Hotels Corp. declined $6.25, finished the year at $16.25. Office building stocks were also hit, as evidence mounted that the steam was leaking out of the office building drive.

• **Liquidation**—On the bright side, most realty issues are selling far below their liquidation value. Hilton Hotels, for example, reportedly could liquidate, settle its debts, and still pay off its stockholders at $40 a share. And brokers in the field say these issues should rise with easier rates. **END**

In the Markets

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Fed Ready to Make Next Move Toward Ease—Another Discount Cut

The money market this week awaited new easing action by the Federal Reserve.

Although Fed officials refrained from any public statement, their latest appraisal of the economic outlook has led to a decision to lower the discount rate once again this month. **At midweek, it was reported that the rate might be reduced by a full ½ point—from the present 3% to 2½%—rather than by a quarter of a point.**

If the Fed makes this move, it will be a tipoff that a reduction in member bank reserve requirements may come next month. Reducing the discount rate to 2½% now would mean that there need not be any further reduction in the rate if, and when, reserve requirements are cut.

Another cut in the discount rate would be quickly followed by a cut in the prime rate (now at 4½%) that commercial banks charged their biggest and best borrowers. Bankers say they have not moved because loan demand, in December at least, remained strong. Although the Fed lowered interest costs, it has not made credit much more readily available.

New York's First National City Bank, for example, points out that the Fed "was less active during the final six weeks of the year, after the discount rate cut, in supplying funds to help banks meet yearend pressures than it had been in previous years."

But the banks are facing a big pay-down in loans this month and, with the Fed moving toward greater ease, they will be unable to maintain the current prime rate. **The fact is that since the Fed lowered the discount rate in November, corporate borrowers can get funds in the capital market at lower costs than the banks offer.** And short-term rates for commercial paper and bankers' acceptances are already below the prime rate.

The bond market has anticipated further easing by the Fed. And it is growing increasingly nervous at the Fed's delay in following up its earlier action.

Unless the Fed moves soon, say dealers, the swift run-up in bond prices will be in jeopardy.

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Stock Prices Start the New Year With Surprising Strength—But . . .

The stock market this week upset the calculations of a lot of experts. After failing to come through with a December rally, which led many Wall Street men to predict that 1958 would start on a decline, the market averages moved up strongly in the first days of trading.

There were a number of technical reasons for the upturn. The end of large-scale tax-selling lifted a depressing factor from stock prices, and the selling itself unleashed cash for purchases. Moreover, institutional investors normally have funds available early in each quarter, and these were put into the market as the year opened.

Most Wall Street professionals stick to the prediction that the market will turn down in the first quarter as bearish economic news accumulates. But the strength of the market this week still surprised them.

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Foreign Bonds and Stocks Seek Welcome From U. S. Investors

The growing importance of the U.S. as a source of funds for foreign undertakings was highlighted this week by a number of new offerings:

The International Bank for Reconstruction & Development—the World Bank—sold $150-million in 4¼% 21-year bonds that are non-callable for 10 years. They immediately soared to a premium.

American Israeli Paper Mills, Ltd., is marketing $6-million in common stock here, while the Royal Dutch Petroleum Co. will raise more than $225-million this month by selling stock, mainly in the U.S.

Other foreign offerings aimed at American investors include $50-million in Philippine government bonds and $15-million in Union of South Africa bonds.

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The Markets Briefs

What's the outlook for stock dividends in 1958? Analysts say that if the economy does not suffer more than a 10% decline, dividends should be close to the 1957 level, despite lower earnings. Most companies have followed a conservative dividend policy and will continue payments as long as they can.

Waning interest in Canadian mine and oil issues, among the most speculative in 1956, helped drop Canadian market volume last year about 35% below 1956 totals. The Toronto Exchange and Curb and the Montreal and Canadian Stock Exchanges—which account for about 92% of Canadian stock trading—had a combined volume of 1-billion shares last year. In 1956, close to 1.6-billion shares were traded.

The missile stock index compiled by E. F. Hutton & Co. indicated this week that shares of companies with missile contracts are outpacing the market average. Missile stocks are selling only 8.13% below the July high, compared with 14.63% for the Dow-Jones industrial average.

Big surprise in the commodities market this week was the fact that **cottonseed oil contracts** shot up again. All futures, except September, gained seasonal highs—after commission-house selling had forced prices down about 14 points. There had been speculation that, since cottonseed oil production was down and quality of the seed was poor, users would switch to soybean oil. But exporters still had old orders to fill, and their purchases firmed up prices.

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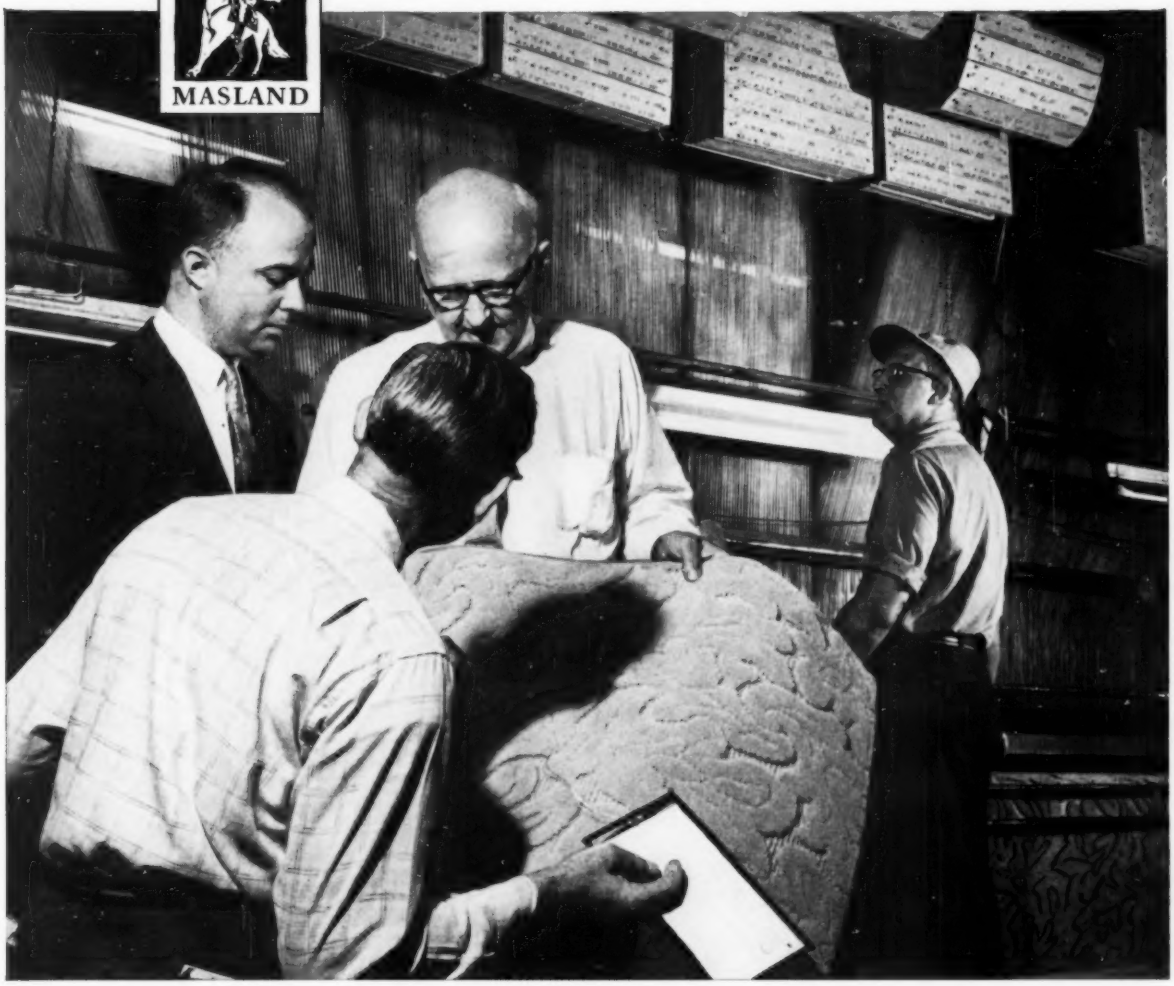

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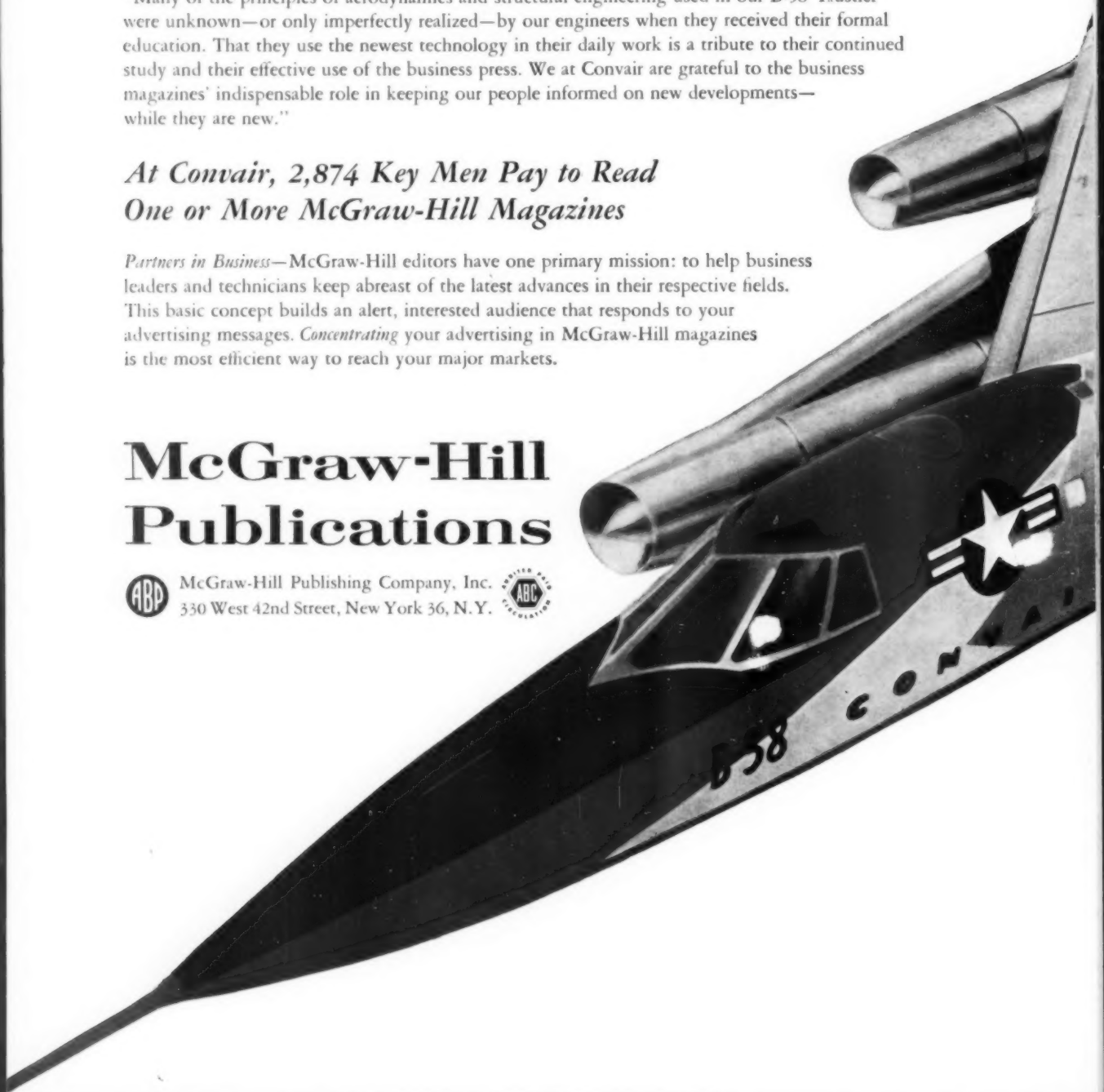

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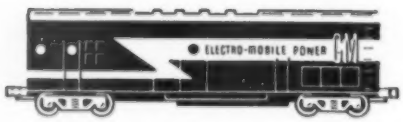

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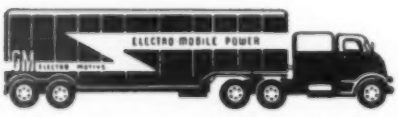

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PERSONAL BUSINESS

BUSINESS WEEK
JAN. 11, 1958

A new federal "tax benefit" may save you money on your income tax return this April if you're a shareholder in a regulated closed-end investment trust. The new rule was signed into law last year; it makes substantial changes in the method of handling taxes paid on capital gains retained by such trusts.

To understand the new laws' implications, it's important to know the background. Closed-end investment companies have always been permitted to retain capital gains and to pay the capital gains tax on them at the maximum 25% rate.

The hitch was that the 25% rate paid by the investment companies when they retained capital gains was more than some of its shareholders would have paid individually if the capital gains had been distributed. (Only individuals whose income is in the 50% bracket or higher pay the maximum 25% capital gains rate. It's less for those in lower brackets. For example, a taxpayer who pays 30% tax on ordinary income pays a 15% capital gains tax rate.)

Because of this situation, many closed-end companies have felt that retaining capital gains was not advantageous to some stockholders, so they distributed these gains annually. Yet by doing this, the companies crimped the buildup of funds that could be used for further investment.

The new law neatly solves this problem in a way that lets the closed-end investment trusts retain undistributed capital gains, yet still gives the shareholder the same tax position as if the capital gains had been distributed.

Tri-Continental Corp. is one company that has already announced it will take advantage of the law, and others are expected to follow suit. The law pertains to all regulated investment companies including mutual funds but they are not likely to take advantage of the new provision.

The basic provision of the law permits stockholders of closed-end investment trusts to report on their tax returns their share of the company's undistributed capital gains for the year, and also to take credit for the taxes paid on these shares by the investment company. **Major purpose is to provide tax savings to stockholders who normally pay less than the 25% rate on capital gains and changed the tax cost basis of their shares.**

If an investment company retains some of its capital gains, then after the end of the year it sends to its individual stockholders two copies of Treasury Form 2439. On Line 1 of the form, the company lists that particular stockholder's proportionate share of realized capital gains for the year retained by the company. On Line 2, it shows the federal tax paid by the company for the shareholder's account.

In preparing your tax return, list on Schedule D of the 1040 tax return the amount of Line 1, the capital gains realized. On Line 5 of page 1 of the 1040 form, take credit for the amount of tax shown as having been paid in your behalf. List it as "credit from regulated investment company" in the "Where Employed" column. **Caution: Attach a copy of Form 2439 with your return, just as you attach your withholding statement.**

If you normally pay a 25% capital gains tax, the whole transaction will simply be a "wash" operation. However, if you pay at a lower capital gains rate, you get a tax credit.

For example, take a married taxpayer who has a taxable income of

$15,000 and is normally in the 30% bracket. He receives a Form 2439 from his investment company indicating that $1,000 in undistributed capital gains have been allocated to his shares and retained by the investment company. On this amount, the company reports paying $250 tax. **This gives the shareholder an additional $100 tax credit, since under his normal capital gains tax rate of 15%, he owes only $150 on this transaction.**

There's an important second advantage in the law. It permits the cost basis of a shareholder's stock in the company to be written up by 75% of his share of the investment trust's undistributed capital gains. This boost in cost basis works to his advantage if he sells the stock at some future date.

The way the shareholder handles this is to file a copy of Form 2439 with his records and increase the tax cost basis of his shares by 75% of the amount shown in Line 1 of the form. Taking the example of the same 30% bracket taxpayer, the cost basis of his investment trust holdings would be increased by $750 (75% of $1,000). **So on a future sale at a profit, the $750 increase would mean a savings of $112.50 in capital gains tax (15% of $750).**

By the way, if you're a director of a foundation, endowment, or pension fund make sure your tax man takes advantage of this law. This section permits such tax-exempt groups to get a refund on the amount of taxes the closed-end company has paid on your organization's holdings.

—•—

Is your Caribbean vacation all set? Here are some late-planning reminders for a trip to the islands—what to wear, how to stay healthy, and local license rules in case you'll want to drive a car:

• "Traveling light" is the wardrobe watchword. Basic gear for a man should include two pairs of Bermuda shorts, two pairs lightweight slacks, four or five drip-dry shirts, three pairs of shoes (beach shoes a must), two bathing suits, cotton bathrobe—plus a summer formal outfit for evenings (white jacket), if you'll be dining and dancing.

If you're a music lover, incidentally, **take along your pocket-size transistor radio** for native programs. And if you want to be in the know gastronomically, cues to Caribbean cuisine are found in "The Art of Caribbean Cookery," a new book by Carmen Aboy Valldejuli (Doubleday, $3.95).

• The only health measure required by the U. S. Health Dept. is vaccination for smallpox (within three years of departure), **but it might be a good idea to get typhoid shots, too.**

Malaria is no longer considered much of a danger for a traveler among the islands, but dysentery is still common. Your physician can give you a prescription for sulphathalidin or paregoric to counteract the disease. Entero-Vioform (Ciba), also helpful, can be purchased without a prescription.

• **Do-it-yourself driving will require a special permit.** The American Automobile Assn. issues an Inter-American license that is honored in Haiti and the Dominican Republic (fee $1). Local licenses are obtainable in the other islands—some call for driving tests, some do not. If you go without an Inter-American license, be sure to take your regular American license and several passport-sized photos. **Your International Driving Permit, which you may have used in Europe, is not recognized, but having it with you may expedite matters.**

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Now! Car heating as quick as car starting ....and STEWART-WARNER is there!

Winter motorists no longer have to endure chilling delays while waiting for warmth from conventional car heaters. Two important new products from Stewart-Warner's famous *South Wind* division provide heat at the turn of the ignition key . . . heat that begins to warm your car before it's out of the driveway!

Now any car—from 1949 to the newest 1958 models—can be easily equipped with Stewart-Warner's remarkable new **MINIT-HEAT,** a device which heats the engine water and produces wonderful warmth from the conventional car heater ***in seconds,*** automatically. **MINIT-HEAT** speeds the removal of windshield fog, frost and ice, and warms the engine quickly . . . to save gasoline, and to protect vital lubricated parts against wear and sludging. Your car dealer, service station or garage has it—or call your local Stewart-Warner or Alemite distributor.

INSTANT-HEAT, Stewart-Warner's other basic advancement for your driving comfort, is a completely new heating system which heats fresh air ***instantly*** to provide immediate passenger comfort and quick defrosting. It replaces the conventional, slow-acting hot-water system, and provides immediate, automatically controlled warmth under every driving condition. ***INSTANT-HEAT*** is now available as optional, factory-installed equipment on DeSoto, Chrysler and Imperial cars. Ask for it!

Quick heat by *South Wind* is another example of Stewart-Warner's outstanding contributions to America's progress.

Through the intensive new product development efforts of its nine widely-diversified, highly-integrated operating divisions, Stewart-Warner continues to strengthen further its leadership in such dynamic, rapidly-growing fields as advanced electronics, instrumentation, high-pressure lubrication, materials handling, heating, air conditioning and complex heat exchange technology.

Whoever you are, wherever you live, work or travel, **Stewart-Warner is there**—making work easier, life better, America more secure.

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STEWART-WARNER Speedometers, Gauges and other Automotive, Industrial and Marine Instruments;
South Wind Aviation Heat Exchange Products, ***INSTANT*** and **MINIT** Automotive Heaters;
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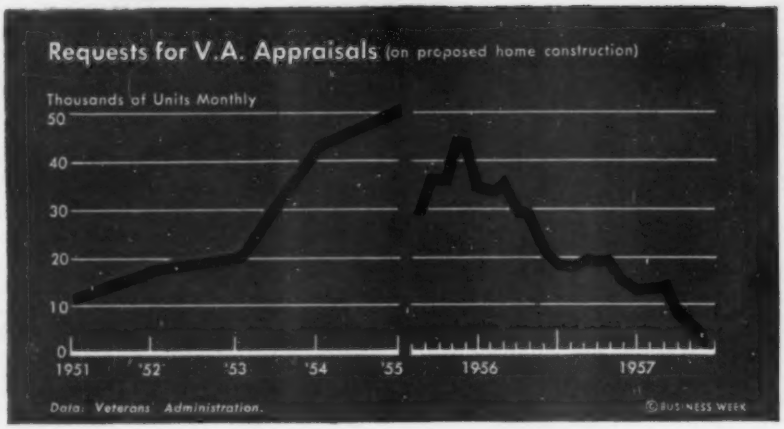
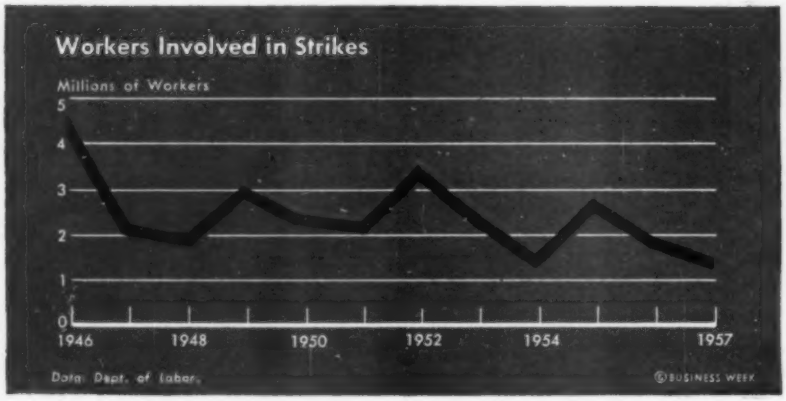


Drop to 7-Year Low

Appraisal requests for G.I. home loans plunged to a 7-year low in November when they dropped to 3,748—83% below the 21,941 of November, 1956, and 42% below the 6,433 in October.

The number of VA financed new homes actually started in November dropped to 6,409 from 9,665 in October and 17,824 in November, 1956. The decline is evidence that few investors are interested in the 4½% interest rate on VA mortgages. Interest rates on FHA mortgages are now 5¼% and the rate on conventional mortgages is higher.



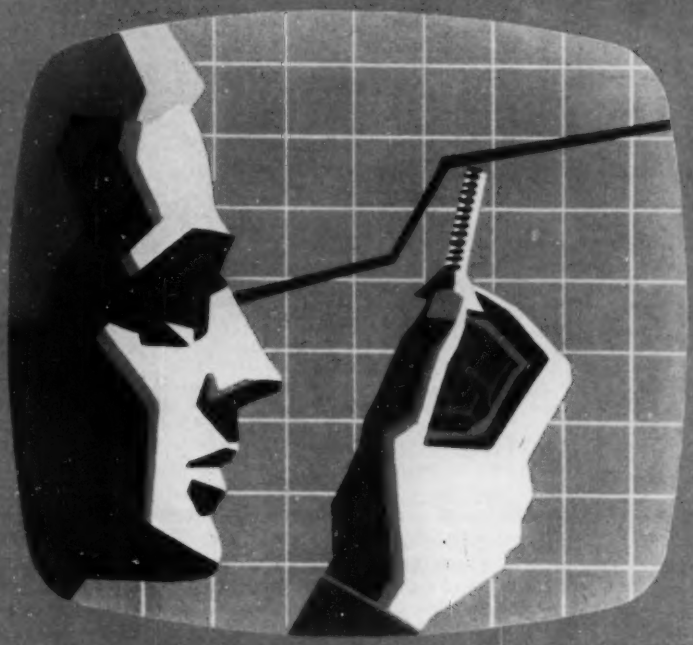
A Post-War Low

The number of workers involved in the 3,600 strikes that began in 1957 reached a postwar low of 1.4-million according to preliminary estimates prepared by the Dept. of Labor. Over-all strike activity during 1957 declined substantially from 1956 levels: About 16-million man-days of idleness resulted directly from all strikes in effect in 1957 compared with 33-million man-days lost in 1956 and the postwar high of 116-million lost in 1946. The number of new strikes beginning in 1957 was also lower than in most years since World War II.

One reason why the figures dipped sharply last year was fewer major labor disputes—those in which 10,000 or more workers directly participated. In 1956, the steel strike heavily influenced that year's statistics.

Major strikes in 1957 included the nationwide cement dispute, a 61-day strike in the construction industry in

This membership seal means



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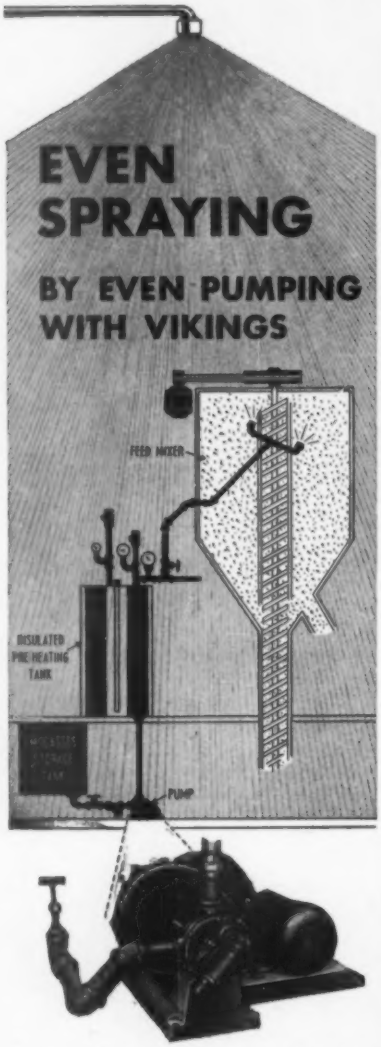

Even spraying is a basic necessary feature of the "Spray-Mo-Las" stock feed sprayers produced by Bob F. Riegel of Riegel & Son Elevator, Woodington, R. R. 4, Greenville, Ohio. The unit illustrated sprays molasses on dry ground feed. Riegel also makes a "Spray-Mo-Fat" unit for spraying animal fat on feed. Both units are equipped with Viking Pumps because Vikings deliver a smooth, even flow of molasses or fats to the spray jets, when feed is mixed.

Because of positive delivery by Viking Pumps, uniform quality of feed can be maintained, so Riegel spraying equipment has found a ready market among feed dealers.

Smooth, even pumping is a built-in quality of every Viking. If you have a pumping problem requiring constant flow, Viking can be your answer. In fact, if you have any pumping problem, see your nearby Viking distributor or write for bulletin series 58s.

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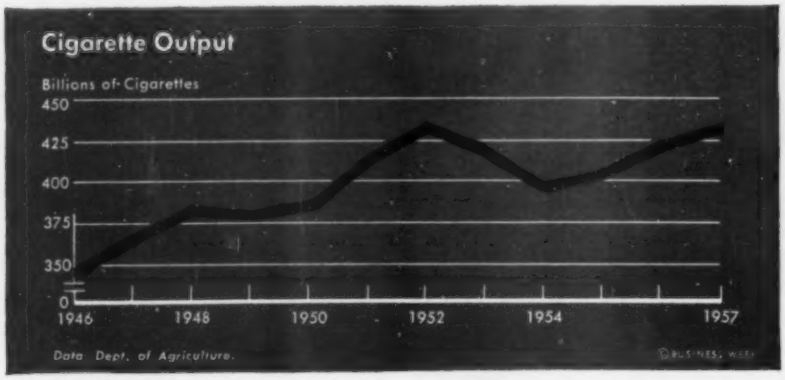
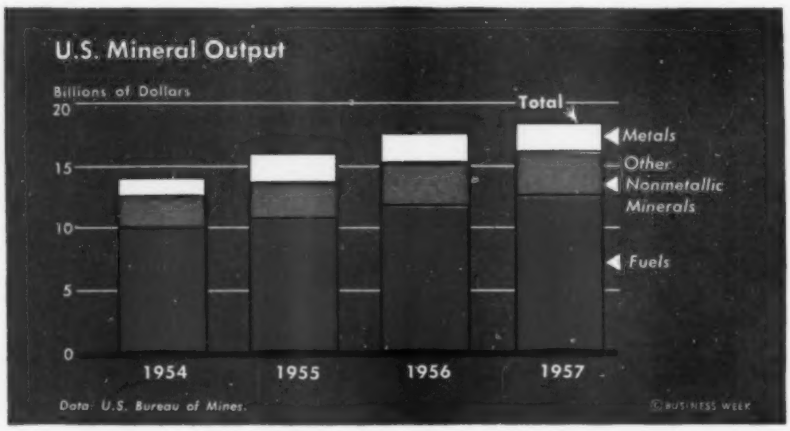
the Kansas City area, Missouri; a 44-day strike in the San Francisco-Oakland, California, metal trade; and a brief strike of Western Electric installers that idled about 125,000 telephone workers throughout the country.



Due to Reach a Record

Cigarette production this year will reach a record 441-billion—4% above 1956, the Dept. of Agriculture estimated. A record 408-billion of the total are earmarked for domestic use. The figures suggest, the department says, that the early summer publicity linking excessive cigarette smoking and lung cancer has not yet affected consumption to any appreciable extent. However, it adds, that at this time there is no certainty that cigarette use in 1958 will continue the strong uptrend of the past year.

The 1957 output betters the previous high set in 1952 and approximately parallels the demand curve. Following that year domestic consumption declined for two years in a row, then rose gradually starting in 1955.



Valued at Record $18.3-Billion

The nation's mineral output reached a record value of $18.3-billion in 1957, a gain of more than $750-million over 1956, according to the Bureau of Mines annual preliminary production report for 1957. The 1957 increase was due almost entirely to higher values for the mineral fuels, particularly crude oil and natural gas. These increases were large enough to offset declines in production for most other minerals as well as sharp drops in base metal prices. Natural gas and iron ore were the only major commodities to show sizable production increases. Anthracite, cement, gypsum, phosphate rock, bauxite, chromite, and tungsten all declined in both production and value.

Fuels had an over-all gain of 8.7% in value compared with an increase of 1.6% for other nonmetallics and a decrease of 1.6% for metals.

Short cuts with Recordak Microfilming

Latest reports on how this low-cost photographic process is simplifying routines for more than 100 different types of business . . . thousands of concerns

TAKES CHRISTMAS RUSH IN STRIDE

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You would expect the Billing Department at Wallace's to reflect the frenzy of last month's Christmas rush. But with Recordak Microfilming they're getting the bills out on schedule same as every month—without extra help or overtime.

Photographing the customer's sales checks, and sending them out with the bill, ends need to list and describe each purchase. Only the sales check totals and credits are posted on bill. As a result, each billing clerk can handle 4 times as many accounts. Other advantages: Customer questions are answered in advance by sending original sales checks out with bill. And fire insurance rates on accounts receivable insurance are reduced by vault-storing Recordak Microfilms.

SPEEDS THEIR SNAPSHOTS BACK

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Snapping pictures of "snapshot envelopes" with a Recordak Junior Microfilmer lets Bri-Tone Division of Calandra Camera Company speed deliveries to some 2,000 "pickup" stations. And it cuts costs drastically—four times as many billing clerks would be needed if the data on envelopes were transcribed manually for office record.

Completely accurate film records—which can be reviewed immediately in a Recordak Film Reader—also make it easier for Bri-Tone to answer questions about any shipment or to trace the occasional misdirected envelope of snapshots.

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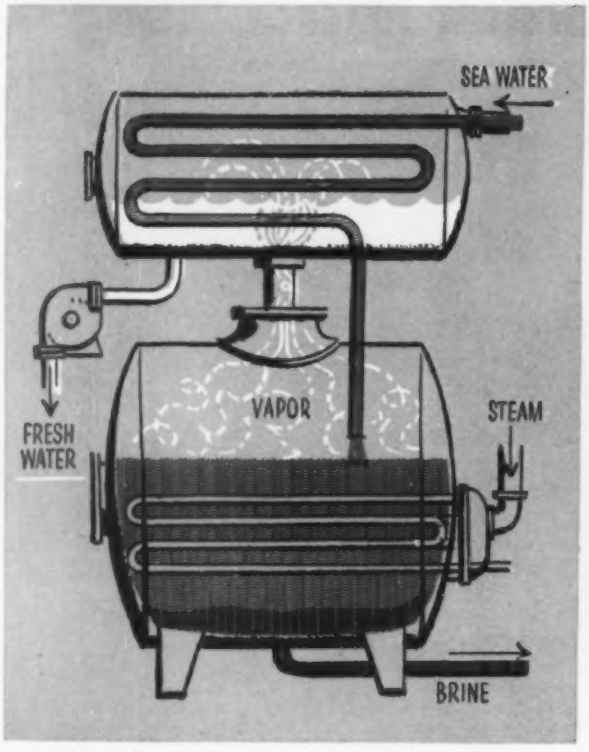
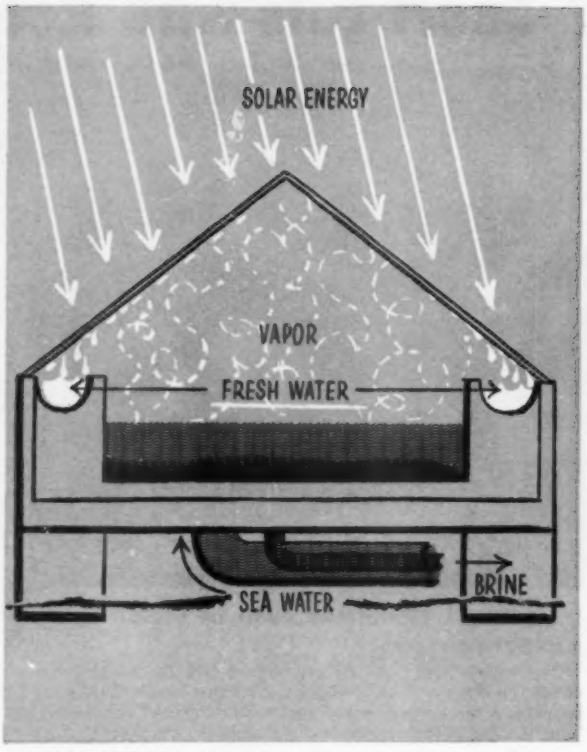


DISTILLATION is best bet for making sea water usable.



SOLAR STILLS get free heat, but equipment is very costly.

Brewing a Drink of Sea Water Is

With natural sources of fresh water being depleted, men are already well along in the art of tapping the ocean—and the hunt is on in earnest to break the cost barrier to wider use.

The British government has decided to install in the Bahamas a $1½-million distillation plant capable of "making" a million gallons of fresh water a day from sea water. The decision is a clear sign that the latest chapter in the story of the sea—its use as a water source—is well under way.

The diagrams give an idea how far the chapter has already gone—and how intensive is the search for commercially practicable ways of turning into usable water the inexhaustible waters of the ocean, or the somewhat more limited supply of brackish water found in some land areas.

The search in the U.S. is spurred on by the growing realization that natural sources of fresh water are exhaustible—and are being exhausted. It is beginning to creep into the consciousness of Americans that there's no guarantee they will always have at their fingertips the 137 gal. a day they are accustomed to—that they may not always be able to squirt hosefuls of water over the family car and the front lawn in midsummer, much less attract new industrial plants to their community, without a serious effort to find some new supply.

Today, the U.S. splashes away about 262-billion gal. of water daily. The prospect is that by 1975 the surge of population and water use will double this huge consumption—and it's this outlook that is creating a tremendous interest in any kind of scheme that promises to turn the ocean into a source of fresh water.

• **Cost Barrier**—What stands in the way is not so much lack of technical knowhow as cost. The mean cost of municipal water in the U.S. is about 20¢ per 1,000 gal. No present type of distillation equipment, such as is being used on various islands in the Caribbean and the Persian Gulf area, can make fresh water for less than $1.50 to $3.00 per 1,000 gal.—and that's the wholesale price, rather than the price at the tap quoted for municipal water.

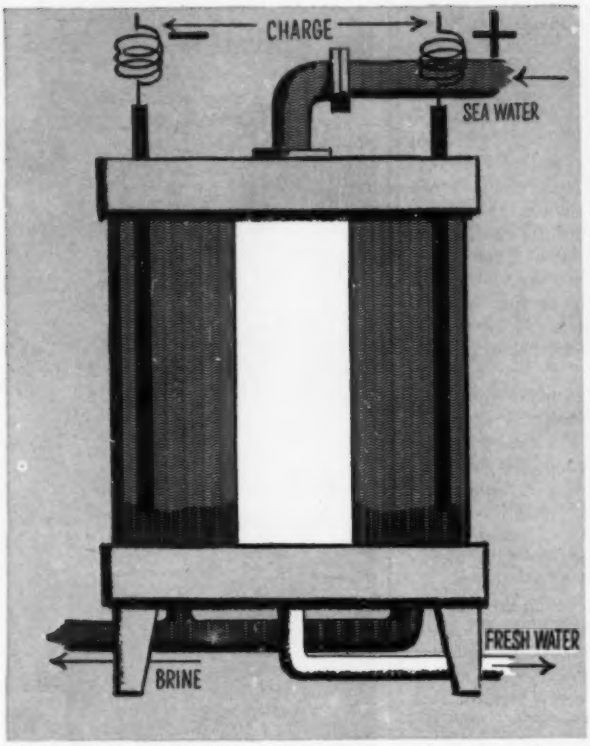
The drive is on in earnest, however, to break through this cost barrier. Scientists in every nook and corner of the world—in the U.S., Israel, Japan, Australia, South Africa, France, the Netherlands—are seeking an economical method of turning sea water into fresh.

The U.S. Office of Saline Water, in the Interior Dept., has nearly 40 different projects going, encompassing all manner of approaches: freezing processes, solar evaporators, electrochemical processes, plus a stepped-up drive to cut the cost of existing distillation processes.

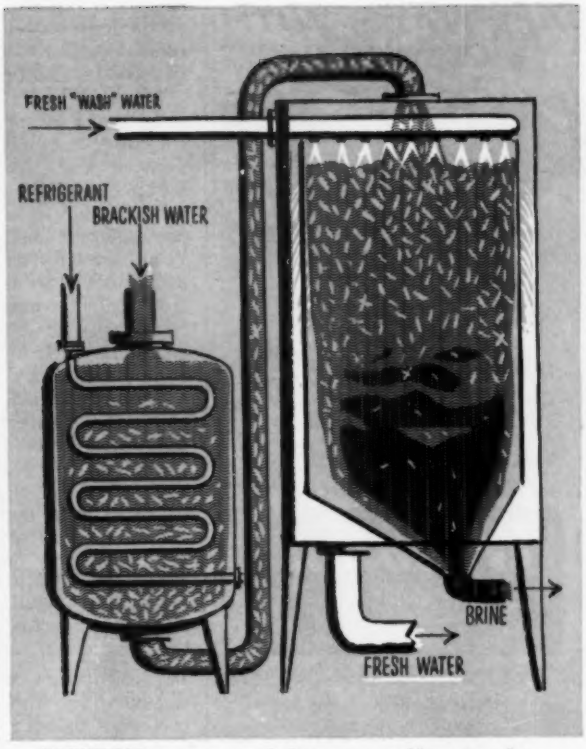
• **Goal**—The goal is water at 40¢ per 1,000 gal. Many feel that attainment of this goal would rank as one of the major technological breakthroughs of the century. But that is still in the future, maybe 10 years or more away.

I. Today's Pioneers

The best that competent engineers see as possible today is to convert salt water to fresh for $1 per 1,000 gal.—and that only if the water distillation unit is tied in with, and uses the exhaust steam from an electric power generating plant. In the next few years, these engineers think the cost can be brought



ELECTRIC MEMBRANE unit forces salt out through membrane.



FREEZING to get out salt has many problems to solve.

Easy—But Still Costly

down to about 75¢ per 1,000 gal.—still not cheap, but perhaps low enough to attract some industries and isolated municipalities.

You can get a better idea of possibilities by a look at the economics of the installations already operating. As you'd expect, they're most numerous where water is scarcest.

• **Ships**—Distilling plants, or evaporators, have been in use on ships for some years. The Forrestal-class aircraft carrier Ranger's four units make 200,000 gal. a day; merchant ships need much less. Here, of course, costs are secondary; if a ship didn't make its own fresh water, it would have to use up cargo space carrying it. Maintenance and operating costs are at a minimum—there's always engineering personnel handy.

• **Outposts**—Distillation plants are also going up in out-of-the-way spots that have to import water by tanker. Biggest single plant to go up as a unit is the 2.7-million-gal.-a-day plant designed for Aruba in the Dutch West Indies by the New York engineering firm of Singmaster & Breyer. It's a combination water and electric power plant, and is scheduled to start operations in April. Its water costs are figured at $1.75 per 1,000 gal.—competitive with the cost of tankering water. Evaporators for the plant are made by G. & J. Weir, Ltd., Glasgow.

The Aruba plant is outranked in size by the 5-million-gal.-a-day installation that provides a water supply for Kuwait in the Persian Gulf; but this was built over a period of years.

• **Industry**—In more accessible areas of the world, users of industrial water are likely to be the first to pay the going water conversion rate if a sea water supply permits them to move closer to raw materials or other supplies. A case in point is Pacific Gas & Electric Co.'s new power plant at Morro Bay, Calif. The site was ideal for the proposed 300,000-kw. plant, but lacked an adequate source of fresh water. PG&E built there anyway, using sea water and installing a 144,000-gal.-a-day distilling facility that runs off the exhaust steam from the turbines (at about $2.60 per 1,000 gal.).

• **Cities**—Municipalities faced with the necessity of building costly reservoirs a long distance away and piping in the water may be next to jump on the sea water bandwagon. Key West, Fla., which must pipe water 130 miles, is reported to be considering a salt water distillation plant. Los Angeles, too, may some day have to quench its thirst by turning to the sea.

Though some pin their hopes on the more spectacular methods of solar evaporation or freezing to free sea water of its unpalatable salt, the distillation processes still offer the best inside chance in terms of a practicable cost.

II. Getting Out the Salt

Basically, distillation is quite simple—all it involves is boiling the salt water, catching the vapor, and condensing it. What runs up the cost is that this takes large quantities of heat energy.

To cut the cost, engineers try to get more out of every pound of fuel by building multi-stage systems (in the trade, the stages are known as "effects"). The heat given off by the condensing vapor from the first stage is fed into a second "effect" to boil off more vapor—and so on down the line for as many as 11 effects.

• **Variations**—Engineers are currently hard at work trying to refine still further the tried-and-true distillation processes, and to evolve new variations that will give a better edge on costs (BW—May 8'54,p15) or provide other advantages.

Design engineers will be keeping close performance tabs on two 1.25-million-gal.-a-day flash evaporation units that Westinghouse Electric International Co. is adding to the Kuwait facili-

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ties. These units utilize a sudden drop in pressure, rather than heat, to boil off the fresh water. Though they promise added efficiency, costs are expected to come to $2.80 per 1,000 gal.

Maxim Silencer Co. holds out the promise of a cheaper method. Maxim is currently installing 27,000 gal.-a-day units at the Castle Harbor Hotel in Bermuda and the Cancel Bay Plantation in the Virgin Islands. The company claims it could build a 1-million to 1½-million gal.-a-day plant that would make fresh water at less than $1.00 per 1,000 gal. Its design—of the multi-effect type, with seven to 12 effects—incorporates a thermo-compression stage to boost efficiency.

Current research projects sponsored by the U. S. Office of Saline Water offer some even lower cost estimates. Best figure is the 39¢-per-1,000-gal. estimate on W. L. Badger & Associates' proposed mammoth, 17-million-gal.-a-day multi-effect still. Griscom-Russell Co., pinning its hopes on flash evaporators, talks of 65¢ to $1.15.

Most unorthodox of these research projects is probably the Kenneth Hickman-Badger Mfg. Co. rotary compression distillation process. Its unique feature is a rotating-drum type of heat exchanger that lays the water out in a fine film on the heat exchanging surface (the drum itself) to increase the amount of heat transferred. Cost estimate on this system is 96¢ per 1,000 gal.

Many competent engineers, however, question the low cost estimates on these research projects. They point out that the estimates are based only on pilot plant studies carried out mostly at International Nickel's Harbor Beach (N. C.) corrosion testing station, and argue that full-scale models will turn up new problems and added costs that did not show up in pilot plant studies.

• **Hurdle**—One of the biggest problems so far—and one that's plaguing everybody—is how to get rid of the scale deposits that form on the stills' heat transfer surfaces, cutting down the efficiency of the distillation unit and boosting fuel costs. In the old days, the only answer was to shut down periodically to clean off the scale.

Even some of the newer methods involve a temporary shutdown. Maxim Silencer's distillation plant designs include a deeply pleated evaporator drum designed to get rid of the scale by a cold-shocking process. This means shutting down the plant from time to time, and hitting the evaporator with cold brine. The resulting expansion and contraction flakes off the scale.

Another method that's being tried is to prevent scale formation by means of low-pressure, low-temperature boiling cycles that keep the water below the temperature (170F) at which scale forms. Some find promise, too, in the

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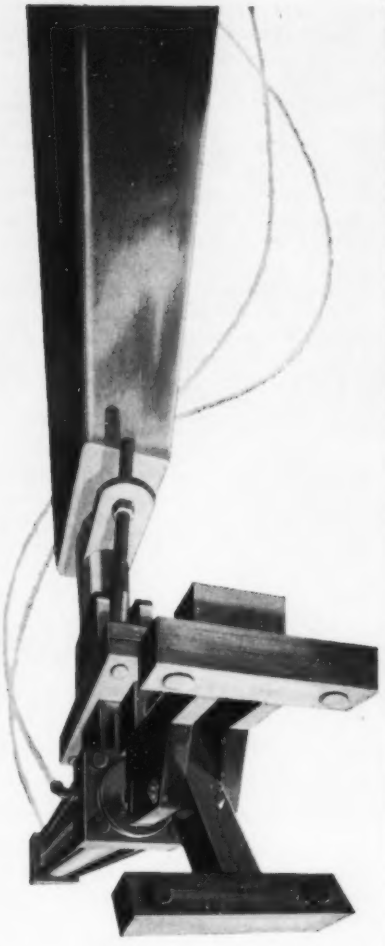

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use of chemical additives, such as ferric chloride, that latch onto the scale-forming minerals, prevent them from precipitating out and forming scale.

• **Opposition**—Because of the scale problem, and the high costs of distillation, there are some vigorous dissents against this method of turning salt water into fresh. The strongest dissent comes from those who would forget about sea water, with its salt content of 35,000 parts per million, and concentrate on brackish water—5,000 parts per million—which is almost as readily available.

This group puts its faith in the electric membrane process (BW—Oct.24 '53,p178); they assert that it has already demonstrated its ability to produce fresh water at less than $1 per 1,000 gal. The process (diagram, page 133) is built around the fact that dissolved salts break up into positively and negatively charged ions. These can then be pushed by an electrical current through plastic membranes that allow passage of the charged particles but not the water. The purified water remains in the zone between the membranes.

The world's biggest electric membrane plant—$1-million, 3-million gal.-a-day affair built for gold mining companies in South Africa's Orange Free State—is due to go on stream in April, producing at 29¢ per 1,000 gal.

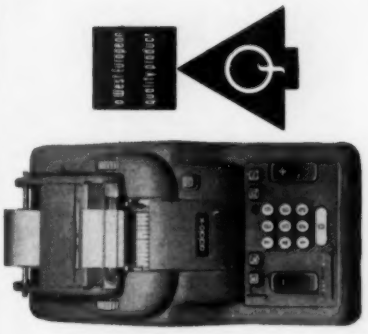
In the U. S., the leading exponent of the process is Ionics, Inc., of Cambridge, Mass. Its largest installation to date is an 86,400 gal.-a-day plant on Bahrein island in the Persian Gulf. It figures its costs—for million gal.-a-day plants—at from 40¢ to $1.00.

If the cost estimates hold up—and brackish water is available—there's a lot to be said for this approach. But for converting sea water, the cost would be prohibitive. A major drawback is the need for large amounts of electric power, which runs up costs.

• **Long Shots**—With sunlight free, you might think costs would be no problem for solar stills (diagram, page 132). But that's not the case.

Basically, solar stills are simply a series of evaporation basins with a glass roof. The water, evaporating under the sun's heat, condenses on the under side of the roof, trickles down into catchment basins. The designer, Dr. George O. G. Lof, claims such a system, built into the ground to take advantage of the earth's insulation effect, could distill 0.8 gal. per sq. ft. of water per day.

The hitch is the size and cost of the installation; so far this has stymied even the construction of a pilot plant. Cost guesses for the product vary from a competitive 75¢ per 1,000 gal. to a rather prohibitive $6.55. A different design advocated by New York University's Dr. Maria Telkes is also run-



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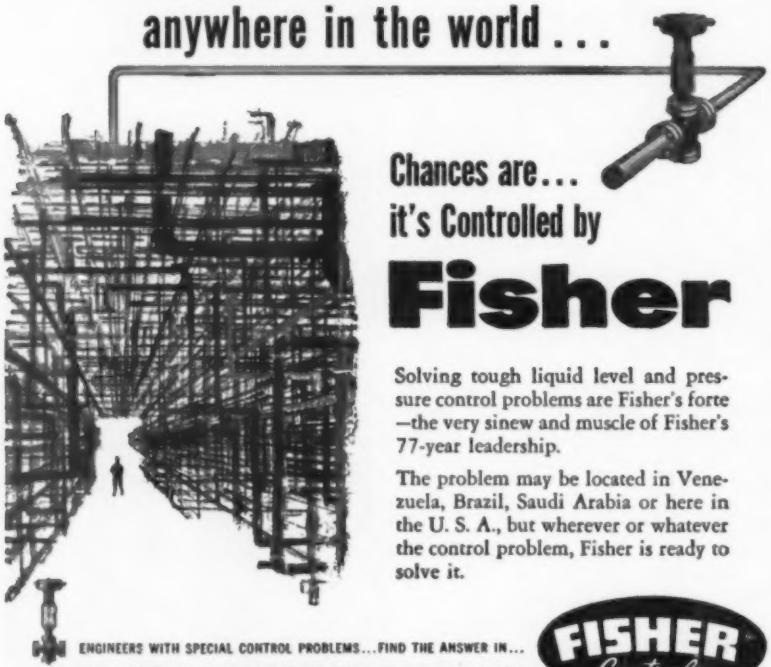

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ning into the same cost problem.

The other long shot, the freezing process (diagram, page 133), is also based on a theoretical advantage—the calculation that it should take much less energy to freeze water to a slush stage than to boil it. Here the big roadblocks are lack of suitable low-cost refrigeration equipment, and the problem of finding an efficient way to separate the pure ice crystals from the salt solution adhering to their surface and in the spaces between them. Among those doing research on this process are Carrier Corp., Battelle Memorial Institute, Pennsylvania State College, Cornell, and the Universities of Texas and Washington.

• **Manufacturers**—Until one of these new processes makes a breakthrough, distillation seems to have the field, at least for converting sea water. Giant among the companies now making distillation equipment is G. & J. Weir, Ltd., Glasgow. Its U.S. competitors include Westinghouse, Maxim, Bethlehem Steel, Griscom-Russell, and Clever-Brooks of Milwaukee (which quotes a cost of $1.85 per 1,000 gal. for an electric-drive vapor compressor system it's pushing).

PRODUCTION BRIEFS

An ore-carrying tanker soon will join the parade of specialized carriers that now carry orange juice, wine, and wood pulp. The new carrier will bring Cuban nickel-cobalt ores in slurry form in rubber-lined tanks to the U.S. for the Freeport Sulphur Co. On the way back, the vessel will carry liquid sulphur (at above 240F) and liquid petroleum gas needed for processing the ores.

•

A silver-based alloy promising a substantial reduction in the cost of control rods for water-cooled atomic reactors has been developed by the Bettis Atomic Power Div. of Westinghouse Electric Corp. Though hafnium, which is currently used, has superior characteristics, the new neutron-absorbing material is expected to get a lot of attention because of its availability and relatively low cost.

•

Air-cushion blasting developed by Canadian Industries, Ltd., is expected to save the construction industry millions of dollars. The patented blasting system is based on building up a barrier of air bubbles under waterborne construction equipment so that it doesn't have to be moved constantly to avoid blast shock waves. Land installations can be similarly protected by separating them from the blast area with a barrier of close-drilled holes filled with empty cans.

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Good News on Atom Power

TO BUILDERS of atomic power equipment, reports of recent experiments at the Argonne National Laboratory are good news, indeed. For more than a year the industry has taken a hammering—orders have been few, production costs have soared.

Now Atomic Energy Commission scientists have demonstrated that the lab's Experimental Boiling Water Reactor can produce electric power for 32 mills per kwh., a fat 20 mills less than its original power cost (BW—Jan.4'58,p32). Further costs cuts are in sight.

What do these findings mean? To an industry struggling to establish itself, and to the public, which too often has been misinformed on the whole subject, it may be just as well to list some things the Argonne tests do not mean.

- They do not mean that power from the atom will soon be as cheap, or cheaper than, electricity from conventional sources.
- They do not mean that the boiling water type of reactor wins the race for the most economic type for power production.
- They do not mean a "breakthrough" that will hasten the advent of cheap atomic power.

THIS is no reflection on the solid technical achievement of the Argonne scientists, who are claiming no such results for their work. And it by no means minimizes the real advance that has been made.

First, the Argonne tests apparently have eliminated a technological "bug" that had caused serious doubts as to the value of the boiling water reactor as a source of electric power. Tests with small prototype water boilers showed them to be plagued with something the physicists call "resonance instability." When thermal power, or heat, rose beyond certain levels, fission fell off drastically.

So the question arose as to whether you could get sufficient heat out of any water boiler to generate significant amounts of electric power before resonance instability set in. This question was happily answered at Argonne when thermal power in EBWR was raised from the design level of 20,000 to 50,000 kw.

This additional heat accounted for the 20-mill drop in cost of power. It was not converted to electricity because the capacity of the turbine-generator was too small to utilize it. But this part of the cost was easy to estimate.

With some equipment changes, EBWR may produce power as cheaply as 20 mills per kwh. This is far from the average cost of six to nine mills for conventional power. But the EBWR was not designed to produce cheap power—it is far too small for that. It was built to prove out equipment and operating techniques.

JUST as important is the manner in which EBWR has dramatized the exceedingly conservative construction and operation of power reactors. Were Argonne to build another reactor of the same type it could omit a number of safety devices that have proved unnecessary. And, after months of painstaking experiments and mathematical calculations, the tests have proved EBWR could operate at power levels that previously had been thought impossible.

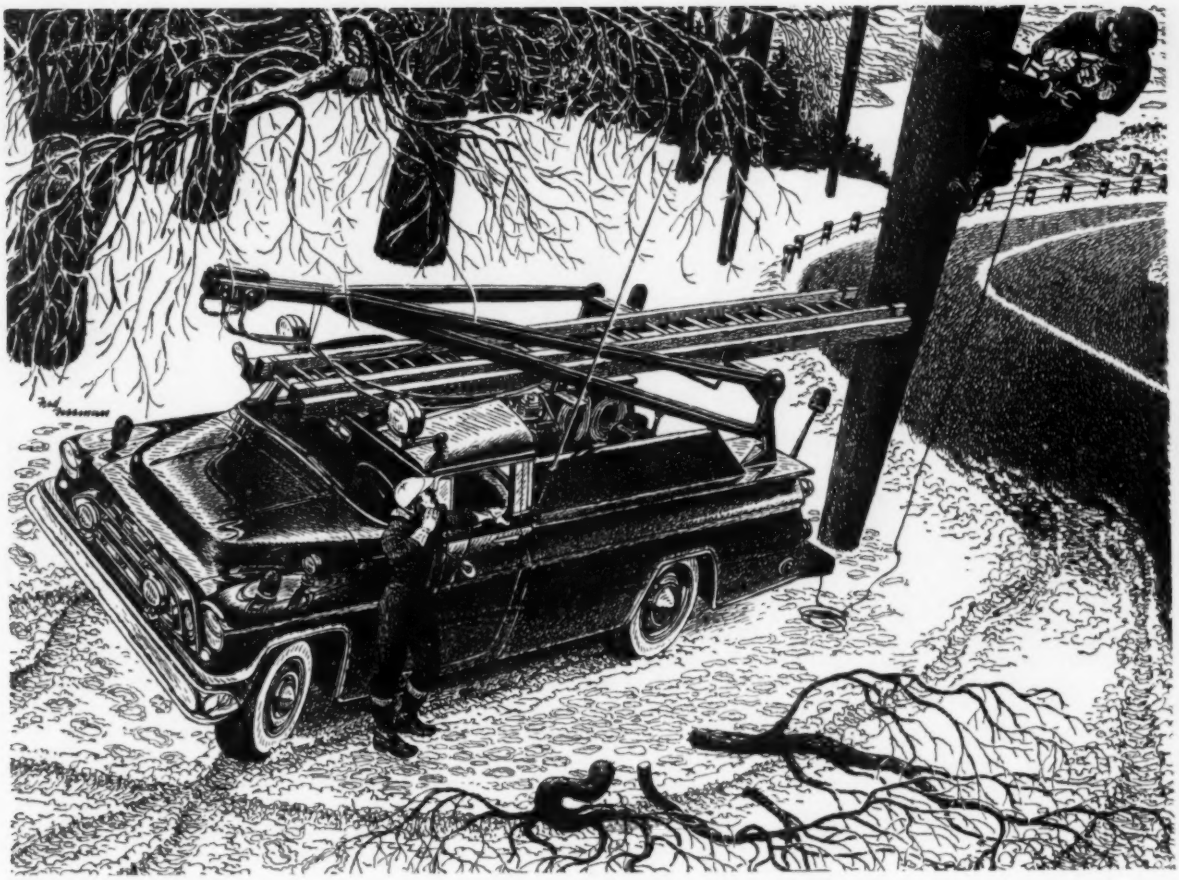
Every power reactor, regardless of type, now adheres to this same rigid conservatism in design and operating limits. The great number of safety devices add to construction costs. The operating limits—initially, at least—inhibit power production, thus boost operating costs.

In the current state of the art, such conservatism is a necessary evil. Safety is a big factor here, of course, but the fact is that we simply don't know very much about the capabilities and operating behavior of atomic power plants.

It is the job of EBWR and the pioneer units of other types to gather this knowledge.

Right now, thanks to Argonne, it appears that this kind of long, tedious development work eventually will lead to a boiling water reactor that will produce cheap electric power. This is a good thing because a large-scale plant of this type is now being built.

But no informed observers are betting that some other type now in development will not achieve comparable, or even greater, efficiency over the same period of time.



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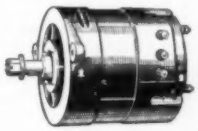

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Redesigned 'Copter Gets Turbine Power

A tried and true helicopter, the seven-to-10 passenger Sikorsky S-55, is getting a major facelift, a new power plant—and, its maker hopes, a new lease on life. Sikorsky Aircraft, a division of United Aircraft Corp., is redesigning its best-selling whirlybird to adapt it to gas turbine power and amphibious operations. The new version will be known as the S-62, but will use most of the same mechanical and structural

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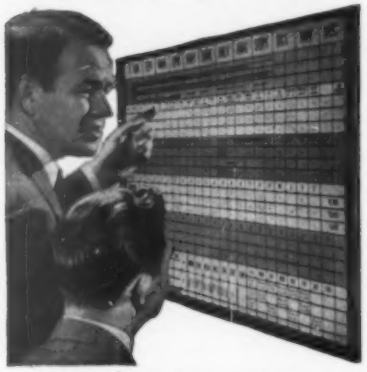

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components as the S-55s, which have logged more than a million flight hours.

• **New Engine**—The major change in the redesigned helicopter is replacement of engine with a small gas turbine—either the General Electric T-58 or the Lycoming T-53, (BW—Dec.21'57,p82). The smaller, but more powerful, engine will give the helicopter greater payload capacity and more room in the cabin. The gas turbine will give the craft full power up to 17,000-ft. altitude and will eliminate the 5-min. warmup required before takeoff when piston engines are used.

In making the engine change, Sikorsky engineers also decided to redesign the fuselage of the helicopter for full amphibious operations. The bottom of the hull is watertight, and the nose has two stabilizing pontoons built in. That not only will give the helicopter greater operational flexibility, but also will eliminate the need for emergency flotation gear. New York Airways, for example, has had to install such gear on its S-55s operating from the Hudson River Heliport in mid-Manhattan.

No price has been set on the S-62, since the cost of the power plant won't be established for some time. The S-55 costs about $150,000, and the S-62 probably will be slightly more expensive. Operating costs, say Sikorsky engineers, should be as low or lower than those of current piston-engined craft. First production models of the S-62 will be ready in about a year.

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A rotating scale that weighs flaky or granular dry bulk material as it flows through a conveyor system has been developed by Stephens-Adamson Mfg. Co., Aurora, Ill. The weighing device receives the material on one side of a rotating table, dumps it off the other side, determining the weight by measuring the offset force on the axle of the table. The scale indicates material flow rate in pounds per hour or tons per hour, or can be hooked up to a chart recorder for a record of total accumulated flow.

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Laying a Basis for Action

This week's report on U. S. security problems and operations, the first of a series in a special studies project of the Rockefeller Brothers Fund, is already stirring up a lot of reaction and comment.

The report will shock many people. It warns flatly, for example, that the U. S. is rapidly losing its lead over the U.S.S.R. in the military race. Within a year or two, says the report, "unless present trends are reversed, the world balance of power will shift in favor of the Soviet bloc."

In these times, such shocks seem part of living. As the report says, "Both within our borders and beyond, enormous transformations—in human aspirations, in the structure of society, in economic development, in scientific knowledge—are reshaping the pattern of existence at a speed without parallel in history."

The report goes on to make it clear that the U. S. can do a great deal to meet the shock of these changes. "The power which is generated by the voluntary effort of a free people cannot be equaled by the reluctant compliance of subject nations."

But what is done can only be done on the basis of thoughtful judgment based on comprehensive information—and here the Rockefeller report makes a basic contribution.

To put together this series of reports, Nelson A. Rockefeller, who became chairman of the project, and Laurance S. Rockefeller, president of Rockefeller Brothers, Inc., started a special studies project in 1956. They set up a staff headed by Dr. Henry A. Kissinger and formed a panel made up of leading citizens as diverse as Gen. Lucius D. Clay of Continental Can and Lee W. Minton of the Glass Bottle Blowers' Assn. Their assignment: the challenges of the next 15 years.

The result in this first report apparently parallels the still-secret Gaither report (BW—Jan.4'58,p104) in bringing information and judgment to bear on the crucial questions of national defense: How should we reorganize the Defense Dept.? How should we strengthen NATO and other alliances? Where are we weakest in weapons? The Rockefeller group also suggests we should raise defense and related spending $3-billion a year for several years to come.

Military men such as Lt. Gen. James Doolittle and Lt. Gen. James M. Gavin, who announced his resignation this week, have reached on their own some conclusions similar to those of the Rockefeller group. And private citizens—operating on a smaller measure of information and with less considered thought—have come to parallel findings.

But the Rockefeller group is unique in surveying the whole area of defense. This comprehensive sweep—plus the disinterested approach of its members—should make the report a major aid to Congress and the Administration as they approach the crucial decisions that must be made on defense. Indeed, we believe that this report and the others to follow will be a notable contribution to the nation.

Common Sense Economics

Arthur F. Burns has the unusual talent of being able to make controversial economic ideas sound eminently reasonable, and even, at his best, commonplace. This talent served Burns and the nation very well during his tenure as Pres. Eisenhower's first chairman of the Council of Economic Advisers.

Now, in a slim volume called Prosperity Without Inflation, which consists of the Millar Lectures that Burns gave at Fordham University in the late fall, he has once again employed his art most usefully.

Burns is sure that the Administration followed wise and constructive policies for checking and reversing the 1953-54 recession. And he is sure that these policies illustrate some general principles for dealing with the downswing of the business cycle.

Treating the present decline undoubtedly calls for a different mixture and timing of policies from those used four years ago, but Burns holds to the general principle that "the emphasis at the start of a recession should ordinarily be on the easing of credit conditions, later on tax reductions for both individuals and businesses, still later on rescheduling of federal expenditure within totals set by long-term considerations, and—as a last resort—on large public works programs."

But Burns isn't wholly happy about the government's economic record during the prosperity that followed the 1953-54 recession. He's particularly concerned about the excessive reliance upon the Federal Reserve to keep the economy stable and the consequent failure to check inflation without unequal pressures on particular borrowers.

What this less successful experience points to, Burns holds, is the need for better coordination and use of over-all government economic policy, of taxes and spending, money and credit (including operations beyond the control of the Federal Reserve), and debt management. He would achieve this by establishing a policymaking board at the highest government level, chaired by the President.

We agree completely with Burns' argument for a better setup for determining and coordinating the government's economic policies, whether this be done through the creation of a new board or through a more formal and regular version of the group of senior economic policymakers who have lately been meeting informally with the President. We hope the nation will find this proposal eminently reasonable, now that Arthur Burns has explained it.

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